

THE
THEORY AND USES
OF
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Being an EXTRACT from the
ESSAY ON WATERS.

By the late CHARLES LUCAS, Esq; M. D.

With Marginal Notes,

BY DR. ACHMET.

Illustrated by some annexed Cases.

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THEORY AND USES

OF A T H S

ROSEY ON WATERS.

THE M. CHARLES LUCAS M.D.

B. A. C. H. M. E. T.

Illustrated by James Maxwell Cairns.

D. U. B. I. N.

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ADVERTISEMENT.

THE general Approbation of the Dublin Baths by the Physicians and Surgeons, and the Encouragement of Parliament, render it unnecessary to dwell on their many useful Qualities in a Preface, the merits of the late CHARLES LUCAS are too deeply rooted in the Hearts of his Countrymen, to stand in need of any Panegyric here; suffice it to say, that the Profits arising from the sale of this Pamphlet, are intended solely for the Use of his Family.

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T H E

THEORY AND USES

O F

B A T H S.

Of the topical uses of Water.

HITHERTO, we have considered the internal use of water. Let us now examine it as a topical application, in which we shall not find it much less effectual, or less universal.

As it is probable, the first disorder known to man was local and external, some foulness or injury of the skin, strain, bruise or wound, and water presented itself in most places, it is likely, that this benign fluid was the first topical application. Its use in medicine, as well as food, no doubt, became early known to man. Nor do we find the brute creation ignorant of its use in either intention. The most ancient writers in the healing art mention bathing, warm and cold, as a well known and proved remedy. And there is hardly any credible account of any people on

on the globe at any time so rude and barbarous, as not to know the use of bathing.

We have before touched upon the antiquity and universality of the custom and use of washing. It is not here necessary to expatiate much further on that subject: The medicinal, not the ritual or religious, use of water is the object of this disquisition. We find then, in all countries and in all ages, of which we have any authentic histories, Bathing was held in universal, high estimation. Thus, in every city in antient Egypt, magnificent baths were built for public and private use. The Greeks followed the example of the Egyptians, as the Romans afterwards embraced that of Greece. By bathing, these people sought the preservation of present, and the restoration of lost, health. Nor were they frustrated in their expectations: For these ends were easily answered to a frugal, moderate people; and the good effects of these salutary applications were observed and recorded by the most antient writers, and the practice, by them authorised, handed down to posterity; as may be seen in the works of HIPPOCRATES, GALEN, ARETAEUS, ALEXANDER, TRALLIAN, AETIUS, CELSUS, CAELIUS AURELIANUS, &c.

The Greek and Roman luxury appeared in nothing more evident, than in the magnificent structures, they erected for their Baths. It has ever been the fate of the most powerful remedies, that men could not be contented with the use of them upon extraordinary occasions and in cases of necessity only, but they must luxuriously introduce them into the common oeconomy of life. Thus wine, and other fermented and spirituous liquors, tea, snuff, and many other useful creatures, are, by their abuse, in our days, so perverted, as, at best, to be rendered useless to those who are accustomed to them, and too frequently to be found destructive. This, soon after their establishment, became the fate of baths: It was no sooner made known to be necessary, to the preservation

vation and restoration of health, to bathe on certain times and occasions, than every one ran into the promiscuous use of the pleasing application. Hence, the Emperors and other great personages raised those superb structures to adorn their baths, of which we find mention made, not onely by the Poets, by Statius, Martial, and others, but by more grave and serious writers, such as SENECA ^a, PLINY ^b, and VITRUVIUS ^c. Of this kind of building, several great ruins still remane in Rome and Italy, monuments of the luxury, as well as magnificence of their founders. In process of time, baths became chiefly used for pleasure and recreation; as we find Charlemagne received his levee in a great bath, in his favourite city, Aken. Such abuse could not fail of bringing baths to discredit and disuse. As this too frequent and promiscuous use of them must have often produced evil, as well as good effects.

But, though the abuse of the best medicine seldom fails of bringing it into general disrepute; physicians should procede upon more rational principles, than to suffer little, mean popular caprices to affect their practice, or discountenance the use of these good things, which reason and experience recommend. When they have the testimony of the wisest of all ages and nations to convince them of the salubrious use of rational bathing, how can they suffer themselves to be discouraged from the using it, by any evils produced by its abuse! Let it not be asked—Physicians are but men. Physic is become a trade; and since it became such, it has too often fallen into the hands of mean, servile and mercenary men, to escape the despicable frauds and artifices, that have over-run most of the trades and employments of life. The public is ever captivated with novelty, and ever reveres things seeming secret and mysterious. Hence, as new modes and fashions become the

^a In Epistol.^b Hist. Natur.^c De Architectura.

life of trade, Physic, the noblest art known to man, has been made to stoop to the same vile craft and artifice, and to put on the shameful mask of obscurity, to serve the same base ends,—sordid gain!

In such a general degeneracy, it is easy to conceive how medicines rise and fall in common estimation, and suffer a rotation of fashions like our cloaths. The frauds and impositions, the horrid train of ignorance, which necessarily attend this base practice, must be obvious to the meanest capacity. In these days, it is no wonder, we find numbers of physicians entire strangers to the nature and qualities of some of the most valuable simples, and not daring, where they happen to know and esteem a simple, common medicine, to prescribe it; when they see vulgar prejudice take up arms against it, or find the popular folly such, as to estimate the value of the physician, as is frequently the case, from the rarity, expence, or complicated preparation, or perhaps the insinuated or imagined mystery of the medicine, he prescribes; or to make men run after a juggling secret-monger, who is not, in knowledge or rationality, three degrees removed from the brute, that draws the gilded chariot, in which he rides triumphant over physic, truth and common sense. Who in such times, will presume to prescribe a plain, simple remedy, familiarly known to old women and nurses?—The sensible, judicious, honest physician, who prefers the good of his patient and the peace of his own conscience to riches, or the favour of a populace, which are too rarely obtained by better arts, than temporising, adulation, and servility. Had the physical world been better stocked with men of this cast, or the populace more discerning, we should see fewer quacks and other knaves make fortunes by the spoils of a deluded people; and medicines would not be rated by their rarity, or, as men are often, by the tinsel on their garments, the magnificence of their houses, or the splendor of their equipages. Had a due regard to the intrinsic worth,

worth, not outward appearance, of medicines been kept up, water, now despised from its commonness and plenty, would have the first rank in the *materia medica*. How far it deserves this class, we have endeavored already to set forth in part, in shewing the internal use of this element, and we shall further evince in explaining the various internal, as well as external disorders, that are curable by the outward application of water.

Water is not much more neglected in the internal use, than external application. To this, the former motives too much concur. But, another of the causes of the disuse of this most powerful, though common remedy, in the relief of inward disorders especially, seems owing to modern physicians laying out more time and pains in investigating the nature and state of the juices, than in examining, or attending to, those of the solids. Had it been duly considered, that the free and equal circulation and distribution of the blood and juices in general depend upon the due elasticity and vigorous tone of the fibres of the solids, as well on the fluid and balmy temper of the juices, and that a more speedy change may be often wrought in the state of the solids by external, than internal remedies; water, which of all other creatures is best qualified to produce such a change expeditiously, could not have lost ground in practice or the estimation of physicians. We shall in the sequel endeavor to set this important, but much neglected matter in a proper light.

Of BATHS in general.

Among the antients, there were various kinds and methods of bathing, which were either cold or hot, moist or dry.

1. The cold baths were always moist, consisting of cold, simple water, for the most part; though sometimes, saline, chiefly sea, water was used.

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2. The hot baths were humid or moist, and dry. The humid or moist were chiefly simple water, artificially warmed, or simple or mineral water naturally heated in its passage through the earth in various *Thermae* or natural baths. The dry were also natural or artificial; such as *Insolation*, or being exposed to the heat of the sun; salt or sand heated by the sun or by an ordinary fire; hot vapours issuing from mines; ovens and stoves, built for the purpose and heated by art; in which bodies were conveniently placed for the discharge of superfluous humidity by the pores of the skin. To these may be added, Baths of fermenting or putrefying Horse dung, or of pressed or fermenting grapes, which are used in some countries, in chronic cases, with great success; and the Vapor Bath, that of any simple water duly heated, plane or impregnated with any appropriate medicine; or the vapor of some natural bath, charged with a subtil, volatile spirit, or with the essential principles of sulphur, as the Baths of Aken, or Aix la Chapelle.

In this place, it would be improper and foregne to our purpose to treat of any other, than the humid bathing, or the various manners of applying simple water to the human body externally, for the preservation or restoration of health. In what estimation this remedy was held among the antients may be collected from ^a HIPPOCRATES, ^b GALEN, ^c ORIBASIUS, ^d STRABO, ^e PLINY, and others.

The waters, which have been in use from all antiquity for bathing, are the different kinds of terrestrial waters; those, for example, of Springs, Rivers, Lakes, or the Sea. Of those, baths may be had or made of any degree of cold or heat, that is required. I shall here onely consider them, as 1. cold, 2. tem-

^a De Liquid. usu. ^b De tuenda valetudine. ^c Lib. vi. cap. xxvii. ^d Geograph. lib. xv. ^e Nat. hist. lib. xxix. c. 1. lib. xxxi. c. 3. &c.

perate, 3. tepid or hot; and then add some account of the Vapor bath, its uses and effects.

I. *Of the Cold Bath.*

Whoever would conceive a rational notion of the operation and effects of any medicine, must first be well acquainted with the structure and use of the parts of the body, with the animal oeconomy in general, with the frame and nature of the part in particular, to which it is to be applied, as well as with the quality of the medicine itself.

The fibres, of which the vessels and other softer solids of the animal body are composed, are of an elastic or springy nature, and so exquisitely sensible, that they are every instant changing their tone, growing more tense or lax, as they come to be affected by the alterations constantly wrought in the animal juices, they contain, or in the atmosphere, that surrounds them. Thus the tone of the fibres of an animal is never at a stand; but more variable, than the best constructed thermometer, in which the liquid is never found at rest. The brute creation sensibly feels the effects, the changes of the atmosphere produces on them, and discovers it to the observant: Rustics foretel the changes of weather, particularly to wet or dry, by observations on the deportment of their cattle and fowl, which are always found to lick and smooth their coats, or feather themselves, at the approach of rain, before any of our artificial machines can measure the change. These creatures feel an itching, or some certain sensation on the skin, upon this alteration of the air, which makes the one lay its fur smooth by rubbing or licking it; and the other squeeze, with its beake, a gland in the rump, which secerns, and upon compression, discharges an oily or unctuous substance, with which they besmear their feathers, so as they may be least affected by the impending rains.

The whole animal frame is made up of fibres of this kind. These fibres are mostly vascular. The vessels, they compose, are twofold; 1. Arterial; and 2. Venal. The 1. or arterial are these which carry the mass of humours from the heart, or center, to the extremities, for the nutrition of the several parts and the elaboration or separation of other juices, from the general mass for the uses of the oeconomy. The 2d. or Venal are those, that carry the superfluous mass, spoiled indeed of all that is necessary for the forementioned purposes, back again to the heart and lungs, by passing through which, it is as it were renewed, replenished with substances similar to what it before lost, which it bestows in its course, as before, upon the several parts in its passage. This is called the Circulation of the blood, the happy discovery of our immortal HARVEY.

Besides the very minute tubes, by which the arteries and venes communicate, each have certain other tubes exquisitely small appertaining to them. These tubular appendages terminate or begin in the skin, and constitute that innumerable and inconceivable number of perforations of the skin, which are called the Pores. These subtil ducts are twofold; 1. The arterial or excretory pores, which precede from the arteries; by which a certain subtil excrementitious humor, exceeding in weight all the other evacuations of the human body, is, in an healthful, which is the natural state, continually discharged in an invisible vapor or exhalation, or in a perceptible dewy moisture. This is the perspirable or transpirable matter, which is distinguished into insensible or sensible Perspiration or Transpiration; the nature and excretion of which was first and best explained by SANCTORIUS, an Italian Physician, and further illustrated by our great LISTER, and the KEILS.

2. The venal or insorbent Pores, are small and invisible ducts, which, passing, like the arterial, through the skin, communicate with the smallest capillary branches

branches of the venes, and thus convey to the mass of blood, all matters that are applied to the surface of the skin in a state subtil enough to pass their orifices. By these, various medicines are conveyed into the blood and produce their respective effects. By these, nourishment is absorbed from the very air: For, by these alone, we can account for the extraordinary fatness of cooks, butchers, and other persons concerned much in dressing or handling of provisions for food: The effluvia or subtil exhalations, that constantly fly off such bodies, especially when warmed or heated, enter into these pores, and are by them conducted to the venes, and so mixed with the blood, and by the circulation, applied to the several purposes of the oeconomy. Hence, we may see, that good air is necessary to our well being; as well for what we may inspire or insorbe by these pores, as for what we take in by the Lungs. And hence, we may learn how cautious we should be in the choice of water for external, as well as internal application: For both purposes, the lightest, subtilest, and softest water should in general be chosen; except in some particular cases, where that, naturally or arteficially medicated, may be found more effectual and proper.

This short sketch of physiology premised, the effect and operation of topical or external applications in general, that of water in particular, may be more rationally explained and easily understood.

The water used for cold, as well as temperate and warm, bathing are to be considered as pure or simple; as that of rain, snow, sweet or insipid springs, &c. or as compound, such as the mineral, or medicated waters. Here, we shall confine ourselves to simple water solely, leaving the others to be treated of in the sequel, under their proper heads.

By bathing in general, is meant the immersion of the whole or some particular limb or part of the body in water; though certain dry applications, such as heated air and vapor, as well as salt, sand, &c. have

have obtained, as before observed, the denomination of Baths, in a physical, as well as a chemical, acceptation. Here, we mean, by bathing, the immersion of the whole or some particular limb or part of the body, in a simple watery fluid onely, either cold, temperate, warm or hot, or lying in the vapor of such. And first of cold bathing.

The action of water, upon the body therein immersed, depends, 1. upon the purity or heterogeneity of the water; 2. upon its levity or gravity; whence its fitness or unfitness to dissolve matters, or enter the pores of bodies; and 3. upon the different degrees of its Coldness or Heat.

1. The purest, simplest waters are the lightest, the most soft and capable of dissolving and washing of bodies, the most subtil and fit to enter the pores of the skin, and dilute the blood. These waters are found cold or hot, according to the temperament of the air and earth through which they have passed, or in which they are kept. The more heterogeneous the water, the more heavy and gross in general it is found, the more hard and unfit to dissolve bodies or enter into the mass of humors by the pores. Its coldness or heat depends upon the same accidents with those of the most pure; for, in this respect, all waters are but passive; some being more susceptible of heat and cold than others, for reasons before observed.

2. The lightest water is found eight hundred times heavier, than common air. In this proportion, then, is the pressure upon the body immersed in water increased, by the greater or lesser weight of water incumbent upon the surface of the body: This is so much added to the weight and pressure of the atmosphere, which is sustained alike in, as out of, water.

3. Water is rarefied by heat and condensed by cold. Hence, cold water is heavier, than the like volume of hot. The colder the water, the more dense, the more heavy, the more gross and unfit to dissolve

dissolve bodies, and enter the pores of the skin, it will always be found.

Hence, the action of cold water, upon the body therein immersed, is easily conceived: It must act, 1. chiefly by its fluidity, which qualifies it to embrace and compress equally all the parts; 2. by its coldness, which constricts the solids, and condenses the fluids; and, 3. by its gravity, which, by compressing the surface with an additional weight, repels all the fluids from the circumference to the center.

As the dimensions of all the vessels, exposed to the immediate action of the cold bath, must necessarily be so contracted, as to receive or contain but very little blood, during the impulse; so, of necessity, the great, internal vessels must be proportionably distended and enlarged. As soon, as this external impulse is removed, if the bowels, which perform the vital functions be vigorous, the blood is propelled with new energy throughout the oeconomy, by the increased force given the elasticity of the fibres of the containing solids. And thus, circulation and transpiration, which were both for a while, in some measure, obstructed or retarded, are resumed and carried on with more than ordinary vigor. The body, which, before bathing, was cold and chilly, from a languid circulation and an unequal distribution of vital heat and spirits, the consequence of the relaxation of the solids, grows warm and lively, perspires freely; and, if close covered up in bed, will sweat profusely; all which arise from an extraordinary momentum given the blood, by invigorating and bracing up the tone of the relaxed solids.

The cures performed by cold bathing are all proofs of the truth of this theory. Whatever disorders arise from a debilitated and relaxed state of the solids, which must sooner or later bring on a viscid, fizy, sluggish disposition of the blood and juices, if taken in time, before the bowels are affected or obstructions are formed, may be effectually relieved jointly by
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this action of the water and this re-action of the animal fibres, in cold bathing.

As the primary and principal effect of cold bathing is wrought upon the solids, whose action upon the fluids is thereby promoted or altered; constant care is to be taken not to administer this remedy, where, by length of time and other accidents, such a change is wrought in the juices, as may make it dangerous to compress or forcibly to repel them from one part to another: For, when they are gross and viscid, or onely in too great abundance, dangerous obstructions or inflammations may be formed, or an increase of siziness and viscosity induced. Besides, the solids will be weakened by every effort, they make to contract or constringe themselves, when the contained fluid is, from its quality or quantity, incapable of yielding to the external compressure of the solids wrought upon by the cold water. And, when the fluids are by any means reduced and broken, or rendered thin, acrid or sharp, by increasing the force of the circulation, or distending some of the internal vessels, by the sudden influx of blood, in the lungs, brain or other bowels, an haemorrhage, an effusion of blood, or bursting of blood vessels, of most fatal consequence, may well be occasioned, by ill-timed cold bathing.

A similar reason renders universal cold bathing perilous and destructive, where any bowel is obstructed, inflamed or debilitated: The contraction of the fibres and the consequent diminution of the diameters of those vessels, which are nearest the surface or most affected by the cold immersion, must occasion a greater impulse and distention of the vessels more remote from its action; these then must receive a greater influx of blood in proportion to their sizes and the tones of their fibres. Such of these vessels, as are by any means obstructed, must have that obstruction increased or confirmed by cold bathing, and such, as are any way debilitated, must be proportionably

ably distressed by yielding more to the increased influx thus occasioned. These general concise cautions premised, let us procede to consider in what cases and circumstances cold bathing may be used with desired success.

As the general disuse of water is to be universally regretted ; so the great, modern neglect of cold bathing is much to be lamented by all the northern inhabitants of the earth more especially ; but chiefly by the inhabitants of these northern islands in particular, whose natural diseases may mostly be prevented or cured by the rational use of cold bathing. But to illustrate by some examples ; —

There is not any disorder to which we are more subject, than those, that take their rise from obstructed or inordinate perspiration. The discharges by the pores of the skin are not only greater in quantity, but of more importance to the oeconomy of life, than all the other excretions taken together. The more changeable and uncertain the climate, the more irregular must the cutaneous discharges always prove. Our climate being extremely variable, obstructed perspiration, with all its train of evil consequences, must be, as we find it, very common. Hence, what we call catching of cold becomes so frequent. Hence, the Murr or stuffing of the Head, Rheums, or Catarrhs, Coughs, Astma's, &c. are so rise amongst us.

I do not point these out, as disorders, which may be cured by cold bathing. I have already observed, that when the juices are in any wise morbid, when they offend in quantity or quality, or when any particular part is inflamed, obstructed or weakened, cold bathing is in general to be avoided. But, the just now mentioned consequences of obstructed perspiration may well be prevented by the timely use of cold bathing ; which gives such a sensible elasticity to the Fibres, as keeps the skin proof against the frequent, sudden changes of the weather, whether from

hot to cold, from dry to moist, or the reverse; and, by preserving that due tone, supports a free and equal circulation, and with that, the due secretions, as well as this and other excretions, necessary to perfect health.

Rachitis, or Rhachitis, the Rachits, or Rickets, as it is commonly called, is a disorder, that foreigners, sometime, have looked upon as endemial in Britain, peculiar to our soil and climate. But for this notion, there is no good authority. Some look upon it to be a new distemper; for no better reason, than its not being expressly named by the ancients; but, the signs and symptoms of the disease seem to be given by HIPPOCRATES in speaking of the disorders of children, where he mentions the bending inward or distortion of the spine, the preternatural growth of the head, &c. It is best treated by the moderns; among which, the most eminent are our GLYSSON, SYDENHAM, CHARLTON, and MAYOW. By these it is confessed, the Rachits arise from an unequal distribution of the nutritious juices; from the abundance of which, some parts of the muscles, bowels and bones increase beyond the natural size, to the disfiguration, and distortion of the parts, or the dislocation of the joints; whilest others, from a defect of the necessary supplies, emaciate, shrivel, and consume. Though this disorder be too rife in our country, I see no just cause for pronouncing it endemial. It is not improbable, the humidity of our climates may make it appear more common with us, than in drier countries; but, I doubt, no part of Europe will be found free from it; especially, where softness and luxury have broken the natural strength and hardy disposition of parents and their unnatural, but fashionable, substitutes, Nurses. The Rachits were not taken notice of in Britain before the year 1620, or thereabouts, when our GLYSSON obliged the public with his treatise on this subject. About this time it was, that our ancestors began sensibly to fall from the primitive
simplicity

simplicity of their Diet, Customs, and Manners. From this period, we may date the rise, and count the progress of this enervating and disfiguring distemper. It can not therefore be deemed properly endemial, nor solely confined to our soil or climate. Our physicians having first favored the world with a rational and just description and method of cure of the disease, is not sufficient grounds to charge the distemper upon Britain. Happy it were for us, had this been the onely distemper, luxury had introduced, and that that fell contagion had not more disordered and disfigured our minds, than the Rachits have deformed our bodies. But, this is no place for moral or political physic.

Among the various remedies recommended for the Rachits, cold bathing has been found the chief: It is that, by which this disorder is most effectually prevented, and without which, in mine opinion, it can hardly be perfectly cured: For, the most powerful alteratives prescribed, will be found ineffectual in bracing up the relaxed solids to their due tone, without the help of frequent and long continued immersion in cold water. And the early and frequent use of it, will be sufficient to prevent this detestable distemper.

Sir JOHN FLOYER ^a is of opinion, that the Rickets were not known in England before the original custom of Immersion was exchanged for sprinkling in Baptism. I shall not here enter upon a disquisition into the soul-saving or body-healing nature of immersion, considered as a Sacrament. As a physical agent, a single immersion, sacramentally or otherwise performed, could hardly be sufficient to prevent or to cure this or any other confirmed distemper. But, the changing a very antient civil custom, and an established religious Ritual, so remarkably, as from a general immersion in cold water, to the sprinkling of

^a ΨΥΧΡΟΒΑΝΗΜΑ : or Hist. of cold bathing.

the face solely, slightly, with that element, shews that the idle fears were contracted about general immersion, that men began to drop it in every sense, and therefore had the very form of a Sacrament altered by an ecclesiastical Canon, to prevent the dreaded ill effects, even in Baptism. It must then be owing to a general neglect or disuse of cold bathing or washing, not solely to the alteration of the baptismal manner of the immersion, that this sensible change was observed to have arose in the constitutions of our children, about the beginning of last century. It is therefore much to be wished, that the salutary regimen may in all respects be restored. It is to be hoped, that men will inure their children, from their infancy, to cold washing and cold bathing, as the most powerful preservative and restorative of health and vigor. The advantages of which uses of water are recommended by the grave authority of ARISTOTEL^a, who says it is not onely necessary for the preservation of health; but also makes men hardy and strong, fit for the army.

In recent luxations, or strains and bruises, the vessels are so weakened by the distraction, that they receive too great a flux of humours; whence tumor, pain, &c. ensue. In these, there is not a more present and effectual remedy, than cold water; which, by its weight and by its cooling, contracting quality, presses upon and constringes the weakened parts, and prevents the flux of humors usually attending such injuries; in which, the rational cure consists.

In the Rheumatism and Gout, when the inflammatory disposition and the morbid state of the humors is corrected, cold bathing is found a most sovereign remedy. I mention these together, as two fatal distempers, which I look upon to have the greatest analogy to each other; and which are sometimes taken, the one, for the other. The Gout is

^a Politic. lib. vii. c. 17.

an obstruction of the synovial vessels, those, that carry and secrete a smooth, soft, gelatinous fluid for lubricating the several articulations or joints of the body to prevent their heating, ease their friction, and facilitate their motion. This is always attended with more or less inflammation and pain, and with a symptomatic Fever, in proportion to the habit of the body, and the sensibility of the joint affected. The parts engaged being membranous and nervous, the pain is for the most part extremely exquisite and excruciating, and the symptoms are extended from the internal to the external parts, with tumor, inflammation and torture. It generally commences in the joints most remote from the center of motion, the heart; as in the toes or feet, fingers or hands: And, as the vital powers decline, or the disorder becomes more inveterate, it makes a greater progress towards the center; and by seizing on some more noble bowel or vital part, closes the tragic scene.

The cause of this disorder is most certainly a too viscid state of the lymph and other juices, arising from indigestion, from a too mucilaginous and acid or acedent diet. This is apparent from the subjects of the Gout, which are generally men passed the meridian of life, thoughtful, inactive and sedentary; such, as are given up to a luxurious, voluptuous course of life; wine, cider, and beer bibbers; great eaters, especially of animal and other mucilaginous or gelly-given food; followers of Venus, or the unfortunate descendents of such, who are often attacked earlier in life; in all which, especially during the fit, the blood is found viscid and sily; the urine thick and high coloured, with other signs of a general viscosity of the Humors.

The most rational and effectual methods of preventing and curing the distemper are farther proofs of this notion. Such as have none hereditary taint, and are moderate in the use of the Non-naturals; eat but simple food, chiefly vegetable; drink but
milk,

milk, or water ; lead active lives, without excess of Venery ; and avoid the extremes of heat and cold in their exercises ; such men, by keeping up a due fluidity of the juices, by the simplicity of their diet, without viscous and inflaming fermented liquors ; and by supporting a free circulation, and a due tone of the solids, by regular exercise ; are rarely, if ever, seen afflicted with this racking distemper, the worst temporal curse of opulence and luxury. Those, that are attacked, are slowly cured by such a method of living, as I have described. In the fit, they are relieved by seasonable blood-letting ; by attenuating and resolving medicines, which are chiefly alkaline or alcallescent ; adding a softening and diluting diet ; by warm bathing and fomenting ; in short, by every thing, that breaks the viscidty of the juices, obtunds or blunts acidity, and restores the general mass of humors to it's natural fluid, soft and balmy texture, and relaxes the tension of the fibres.

In persons who have the misfortune to inherit or contract this morbid, gouty habit, as soon as the stronger irritation of the inflamed blood abates, which some time kept the solids, in the immediately affected parts especially, in a tense, crisp state ; as the fit declines, the fibres in general are found totally unbraced, quite relaxed ; which keeps not onely the patient a long time decriped, but subjects him the sooner to a new fit ; as the relaxation of the fibres greatly contributes to increase the present, or induce a new viscidty of the juices. In such like cases and circumstances, nothing bids fairer for the restoration of strength to the enfeebled parts, and preventing relapses, than cold bathing, which most speedily and effectually braces up the relaxed fibres to their due tone, and restores a free and equal circulation of the blood and juices ; upon which their necessary fluidity, together with the requisite secretions and excretions, depend.

The

The Rheumatism seems to differ chiefly in its place or sphere of action from the Gout : Whilest this principally attacks the joints and their adjoining membranes, that affects the muscles membranes, or membranous capsules of the muscles, and tendons, the glands, and even the periosteum, or membrane, that immediately envelops or covers the bones ; and afflicts with pains exquisitely acute, but inferior to those of the gout ; unless when the Periosteum, or some very sensible membrane, is engaged. It is sometimes attended with a fever, which is generally of the slow, remittent kind. The pains are not always fixed or confined to the part first attacked ; but wander, shoot, and fly about, sometimes with astonishing swiftness. The parts affected are often tumified, rarely inflamed outwardly. During the fit, the Patient is seized with a general languor and imbecility, impatient of being touched, incapable of motion, at least in the limbs affected. This excruciating and enervating distemper owes its origine to causes similar to those of the gout. In the one, a vitated serous humidity and a flatulency prevail more than in the other. Both require a similar method of prevention and cure. After the fit, the tone of the fibres is generally more relaxed in the Rheumatism, than in the Gout ; and after due evacuation and preparation, the cold bath produces as happy effects in the one, as in the other. In both, the general relaxation of the fibres is cured, a free circulation is promoted, the natural discharges supported, and desired health restored and preserved, by cold bathing.

The antients made free with cold bathing, when the morbid state of the juices might seem to forbid it : Thus, we find, GALEN used it with success, not onely in the Ephemera or Day-Fever, so called from the fits terminating within the age of the insect, called the Ephemera, or Day-fly, a natural day ; but also in Putrid and Hectic Fevers, where there was no Bowel inflamed or obstructed. I have known Intermittents happily cured by the same means. It
must

must be confessed, it is a violent remedy, and that none, but the young and robust can well be supposed capable of withstanding the shock of a sudden immersion in cold water, when the blood is highly heated and rarefied by the febrile motion and the solid fibres thereby braced and distended. They, that can endure the shock, must certainly undergo a speedy and extraordinary change: For, the excretions by the Pores, by the urinary Ducts or first passages must in all likelihood be greatly increased; any of which may well prove critical; and, in vigorous constitutions, salutary.

However unfit or hazardous cold bathing may appear in feverish paroxysms; it is evident from what has been already said, under the heads of Rheumatism and Gout, that after fevers, when the vice of the humors is duly corrected, it must effectually restore the lost tone of the fibres; and by preserving that tone, prevent all sorts of fevers, as well as many other disorders. By this manner of acting of water in fevers, we may conceive how, and for what reason, it has for ages been deemed the best remedy for that most dreadful fever attending the bitings of mad dogs and other enraged animals; which distemper is generally most fatal, when it is attended with the Hydrophobia or dread of water, by which it is commonly attended. Here, the sudden and unexpected immersion in cold water powerfully brings on a sweat, which is the principal relief in this horrid distemper. Where a sweat is not occasioned, the cold bath is not found so serviceable as the warm.

If I were to enumerate here, the various distempers, in which cold bathing may be useful, this would prove rather a course of Pathology, than a dissertation on the use of water. Let it suffice, that I observe in general, that where the preservation of present health depends upon keeping the tone of the fibres and the disposition of the cutaneous pores in due order, or where the restoration of lost health is

to

to be brought about by recovering the natural tone of the solids from a contranatural relaxation of their fibres, or by regulating the disposition of the pores, especially from such a state; cold bathing is the principal, if not the sole, remedy. For proof of this, let us but consider the happy effects of this application, known to the most rude and ignorant of the human species.

Historians and Physicians are agreed, that in the most barbarous ages of these northern countries, by which I mean the whole continent of Germany, taking in antient Scythia and the modern governments, whether popular or despotic, of Sweden, Norway, Denmark, Poland, and Muscovy, as well as these our Isles; immersions and washings in cold water, from earliest infancy to oldest age, were the common, constant usage, for a great length of time. The antient Romans went out of their hot, into their cold baths. Several Indian nations have done and still practise the same; as do the whole people of Finland, Livonia, and the great, extended empire of Russia; where, after warm bathing, they not onely go into common cold and superficially frozen water, but even roll themselves in snow. The effects by this use of cold bathing produced, should surely be sufficient to restore and establish the use of it among us; since it is observable, that not onely the different nations mentioned, but our brave ancestors the Britons, were larger and stronger, as well as more strait and comely of stature, more long-lived, more healthy, more robust and vigorous in all respects, than we or any other people, who have not come into and do not continue this familiar use of cold water, have been found in this or any other age. Many men experience, though too few observe, the happy effects of washing their limbs and especially their heads in cold water. They are much less subject to catching cold, to catarrhs or defluxions upon the gums and glands of the mouth and throat; to stuffings and runnings of

the nose, and the like. And one effect, of importance enough to demand our utmost attention, I apprehend to be owing to the use or neglect of washing the head in cold water : It is a trite observation of the practitioners in chirurgery, in France, and other neighbouring countries, even where the climate is not much hotter than ours, that wounds in the head in general, and often the most superficial, are commonly deemed, and found upon experience, mortal ; whereas, not onely wounds of the face and hairy scalp, but even those of the meninges or membranes, that envelope the brain, yea, even with a loss of substance, as well as a division or separation of the parts, of the brain itself, and that by gun-shot wounds, as well as by these of cutting weapons, are with us, most frequently, happily cured. This, I can not think wholly owing to our colder climate, as the like success has attended our chirurgeons in the treatment of our wounded men in different parts of the neighbouring continent. Nor can I attribute it solely to the now known and confessed superiority of our chirurgeons to those of France and other countries. I must therefore rather incline to impute it to this ; that the people of the continent of Europe in general, the French in particular, accustom themselves to thick, warm, woollen caps at night, and seldom or never bathe or wash the head in cold water ; on the contrary, the latter are early taught to look upon the custom, as dangerous and barbarous, and therefore abhor it, whilst our countrymen wear thin linen or no caps at all at nights, and, as often, as they wash their faces, wash or bathe their heads in cold water. In the one then, it may be judged, the vessels of the head and brain are more relaxed, and receive a greater influx of more heated, and rarefied blood, than can be imagined in those, whose heads are cooled, and whose vessels are contracted in their diameters, within due bounds, by their cool lying at nights, and frequent affusion of cold water in the day. This hint, however

however, I submit to the further enquiry and observation of the curious.

I shall conclude what I have to offer further upon this head, with two practical observations of great consequence, though too little attended to.

The one is with regard to obstructions of the urinary passages, called *Ischuria*, the suppression or unnatural retention of urine. This tormenting disease arises from various different causes, which may be better conceived by considering the nature of this excrement and the texture of the parts, by which it is secreted and excreted.

The Urine is a liquid excrement, consisting of a considerable quantity of simple aqueous humidity, charged with such heterogeneous parts, as are hurtful to the animal oeconomy. In this the blood gets shut of superabundant saline, oily and terrene parts. It is called *Lotium*, the wash or ley; for, such it proves to the blood, when it frees it from such impurities as it is capable of dissolving. Hence, the signs of the different dispositions of the mass of humors, upon which health or sickness depend, are collected from the appearance and contents of the urine; which in a morbid state, is found to contain a redundancy of salt, of oily or earthy matters, or of one or all of them; when, in the natural, healthful state, it is composed of just proportions of the three, with water enough to dissolve them, so as to carry them off with most ease and safety to the oeconomy.

This excrementitious liquor is by a contrivance of ineffable wisdom separated in the glands, called the Kidnies, from the mass of blood, by such subtil, fine strainers, as do not admit a single red globule of blood, nor any quantity of the serum to pass their slender tubes, when the thickest and foulest urine gets a free passage.

The extreme orifices of these small tubes open and discharge their contents into one common receptacle in each kidney; which, from a funnel-formed head,

runs, by several smaller canals, into a fine, slender, pliant, cylindrical tube, called, the Ureter, and is continued till it opens into the bladder, one on either side, near its neck.

The Bladder is a cystis or bag of a figure nearly oval, or pair-formed; seated in the inferior part of the belly of all such animals, as make urine, with its bottom uppermost, and its mouth or orifice downwards, especially in man: in adult persons, it is ordinarily capable of containing about a pint of liquor. It consists of three different membranes or tunics, to which some add a fourth. The first or outward membrane is a covering, which it borrows from the membrane, that lines the lower belly, called, the Peritonaeum, which extends commonly no farther than the bottom or superior part of the bladder. Betwixt this and the inner, or as some call it, the second or middle coat, a cellular membrane is found, often full of fat, which is what some look upon, as the fourth tunic. The second or inner coat consists of muscular fibres dispersed in different directions, but chiefly transverse and longitudinal. Under this, is the internal, innermost or third coat, whose inward surface is covered with a soft mucous or gelatinous substance, to soften and guard this receptacle from being injured or irritated by the urine. The neck of the bladder is furnished with a membranous canal of a cylindrical form, guarded with such a mucous liquor, as the bladder itself; This tube, called, the Urethra, is about the thickness or diameter of an ordinary goose quill, and of different lengths in both sexes; in which it is in common destined to discharge the urine, but in the male also to serve in procreation. The neck of the bladder is also provided with a muscle, called, the Sphincter; whose fibres make a band, that embraces and closes the orifice; so that no urine can pass, till its constriction be by some means relaxed.

From

From this short, rough sketch of the anatomy and use of the parts, that seern, contain and discharge the Urine, together with the notion given of that excrement, it can not be difficult to conceive how obstructions or suppressions of urine are caused. These may be occasioned by vices of the humors or of the parts; as when the urine is charged with sharp salts, irritations and inflammations of the parts, attended with strangury or ischury, are brought on; when it is charged with mucous and terrene parts, tartarous or calculous concretions, the Gravel or Stone, in the kidneys or bladder, are produced; which can easily obstruct the passage of the urine through any of the tubes. But, these are not of the kinds of suppression of urine, that may properly be relieved, by the external application of water, especially of cold. They are only such, as arise from the vices of the solid or containing parts; these are chiefly from a too great or hard constriction of the fibres, especially of the Sphincter; together with a relaxation of the integuments or a distention of the muscular and other coats of the bladder, beyond the power of performing the contraction of the fibres, necessary to overcome the stricture of the Sphincter and propel the urine.

In these cases, which frequently happen, and especially in the latter, the common stimulating, durêtic, or urine-forcing medicines, which are but too often injudiciously administered, must prove dangerous, injurious and destructive, as they are generally found upon experience: Such can but irritate; and irritation is more likely to increase, than cure or abate the distressful malady. In the one, warm bathing, which softens and relaxes the overbraced fibres of the retaining muscles, or of the tubes or membranes of the kidneys, bladder and urethra, is generally necessary, with other helps, which are hardly ever found safe without it; whereas this often proves by itself a sufficient and effectual remedy. In the other, cold bathing,
which

which alone best restores to the fibres and membranes of the over-relaxed or distended urinary canals and common receptacle their contractile power, which is also helped by the pressure of the water, and the constriction of the fibres of the outward integuments and muscles of the lower belly, which it occasions; is the most speedy and certain relief. I have often seen very old persons, who are most subject to this kind of retention of urine, and infants, tortured almost to death with diuretic and diluting medicines and stoved and sweated to distraction, by the prescription of ignorant or mistaken practitioners; when a simple, single immersion in cold water, or even the sudden exposing the patient to the cold air, has procured immediate relief by a copious discharge of long retained, and by injudicious treatment, heated, sharpened and increased urine. In these cases, therefore, I recommend, preferable to all other medicines, the exposing the body suddenly to the cold air, giving cold water to drink, and bathing first the extremities, and after that, if it should be necessary, frequently immersing the whole body in cold water, which generally brings the desired relief most speedily.

As immersion in cold water, by helping the over-distended and over relaxed parts to contract, so as to promote the natural discharge of urine thus too long retained or suppressed; so it effectually cures that flaccid, relaxed state of the fibres often seen in old age and infancy, which causes a constant or frequent and involuntary emission of urine.

I cannot close this observation, without cautioning every body against the pernicious custom of forcibly retaining and suppressing their urine, against repeated calls of nature; by which a total and obstinate suppression has been often fatally induced. This complaint when induced by long forced, unseasonable retention, often the fruit of mistaken modesty, is sometimes tedious and difficult of cure. It generally yields

yields to the same means, that relieves suppression from a relaxation.

The other and the last practice observation, which I shall offer under this head, relates to the first, the greatest, noblest and most important worldly task, set by the almighty Creator to his creatures, Generation or Procreation.—Increase and multiply was heaven's first command to man. A precept constantly enforced by the voice of nature and reason; yet, though diligently observed, it frequently proves fruitless in some, from certain imbecilities in either sex, which may be relieved by the use of simple water.

Men often prove incapable of procreation from a softness and too relaxed a state of the fibres. For this, they too frequently have recourse to rich nourishing diet and warm and stimulating medicines, which at best, give but momentary help, and often increase the malady. Whereas, a plain and more slender diet, due evacuation, cold bathing, and regular exercise, would more effectually enable them to perform the procreative functions, and make them the fathers of an healthful and vigorous progeny.

Women likewise suffer on the other hand from a too delicate, soft and relaxed state of the fibres, which, by destroying the retentive faculty, impedes and prevents conception, or exposes them to the loss and peril of frequent abortions. For such constitutions, there is not a more safe and effectual remedy, than cold bathing. This should be used before, and continued for about two or three months after conception; bleeding and other proper preparations premised. And by this means alone, many women may be brought to be fruitful mothers, who either never conceived at all, or having conceived, never brought forth a living child.

One of the many evil consequences of a relaxed and debilitated state of the fibres is a discharge of mucous matter from the urethra in men, which is heightened,

heightened, by certain infection, to a degree of virulence, beyond the reach of cold bathing; from the womb or vagina in women, in whom it is called, Fluor Albus, the Whites. In both these cases, when simple not at all complicated with any thing more than what merely arises from a relaxation of the parts, cold bathing is found a most speedy and effectual remedy.

It remains, that we add some directions for the use of, and proper preparations for cold bathing, and point out the fit times, seasons and manner of applying it.

They who accustom their children, from earliest infancy, to frequent immersion or washing in cold water, will have the comfort of seeing them grow up vigorous and healthful; and they, who observe in themselves the great benefits accruing from this salutary use of cold water, besides the pleasure it affords, when thus made familiar, will be induced to continue the use and benefit of it to the last stages of life. Such will be found to escape rickets, coughs, rheums, rheumatisms, and the lamentable train of evils, that attends those, who, by too great tenderness and warmth in their youth, are rendered feeble and enervate, decrepid and old, before half their glass is run. They, who are thus early inured to the use of water, require no previous preparation, no particular regard to seasons. They wash in hot and cold seasons alike, and reap the pleasure and emolument. I know a gentleman not far from eighty years of age, who, early in life, launched out in trade, and continues it with great vigor, profit and reputation. For many years, this gentleman has accustomed himself to a singular kind of cold bath: He sits or stands naked, while a servant wraps him up in a sheet dipped in cold water, and continues in this some twenty or thirty minutes every morning winter and summer; and in return, enjoys the most uninterrupted state of health.

But,

But, such as have not been early or long accustomed to this familiar use of water, must have recourse to it with caution.

1. Care must be taken, that the bowels be free and sound; void of obstruction, inflammation, or exulceration.

2. That there be not too great a fulness, in the first or second passages. In either of which cases, proper evacuation, by bleeding, vomiting or purging, as the exigency of the case, and the circumstances of the patient, may require, should precede the use of cold bathing.

3. The times for bathing are when the stomach and intestinal channel and the bladder are most empty: as in a morning, soon after the natural discharges are made.

4. The properest season for cold bathing in general, I take to be the colder seasons, not the hot, which are too frequently recommended. Its effects depend upon the constitution of the patient. It warms the sanguine and robust, and in such, promotes perspiration. The phlegmatic and weak, it cools, and obstructs their perspiration^a. But, in such very delicate constitutions, as cannot bear the shock of extreme cold, care is to be taken to attemperate the coldness of the water to their particular case and constitution; or, after beginning in the warmer weather, continue the bathing to, or through the cold season, as the nature and necessity of the case may require.

5. No person is to stay in the cold water till it benumbs or thoroughly chills him. And, as cold bathing is in general intended as a strengthener, the water by its coldness and pressure bringing on an universal contraction of the solids; this intention

^a SANCTORIUS de aere et aquis, Aph. I. Aer frigidus et lavacra frigida corpora robusta calefaciunt, eaque, auferendo superfluum, reddunt leviora. Debilia refrigerant, eaque, vincendo calorem, ponderosiora efficiunt.

must be frustrated by tarrying long in the water ; for, then it becomes capable of resolving and relaxing these fibres, which it is employed to brace up and strengthen.

6. Cold, as well as hot bathing, is best administered in a discumbent posture, as that in which all parts of the body are left in motion, or most at rest : For, then the action of the water is most equal and universal ; always observing that the head be not the last part immersed.

The tender and delicate should be forbidden to move or speak much, whilst they remane in the water ; because moving the organs of breathing or speech, or any of the limbs, whilst under the additional pressure of the water, may greatly distress and injure feeble parts. Those, whose limbs or fingers are apt to be contracted, stiffened or benumbed by the cold bath, should not persevere in the use of it.

Then the coldness of the water may be occasionally increased at any time by the addition of divers salts, which serve at the same time to increase its weight and pressure.

All volatile alkaline salts increase the cold of water ; whereas the fixed alcalies cause the contrary effect.

The vitriolic salts slightly increase the cold of water, alum a little more, borax, more than alum, common salt more than borax, common nitre more than salt, and salt ammoniac most of all.

The proportions, the chief of these bear to one another, as set down by M. Van MUSSCHENBROEK *, stands thus ;

* In Addit. Translat. Act. Acad. del Cimento.

1. Roch alum powdered, } caused no sensible
two drachms added to two } change upon mix-
ounces of water, each of the } ture, but in about
degrees of heat of 44 by the } half an hour fell to
Thermometer. } 43½.

2. Borax dried and powder- } mixed caused a sen-
ed, two drachms added to one } sible change by fall-
ounce and a half of water, } ing to 43.
each of 45 deg. of heat.

3. Sea salt dried and water } fell from 45 to 41
of the same temperament and } upon mixture.
in like quantity.

4. Common nitre or salt } sensibly changed as
peter, in like proportion and } the nitre dissolved,
of the same temperament, } till it fell from 45
to 31.

5. Salt ammoniac and water }
in like proportions and of the } fell from 45 to 27.
same temperament,

Thus may cold baths be medicated, their coldness,
and with that, their weight and pressure increased,
and other qualities changed according to the inten-
tions of the judicious physician.

The vitriols, which are metals, chiefly iron and
copper, dissolved in the universal acid, and verdi-
grise, which is copper corroded by a vegetable fer-
mented acid; all increase, in some degree, the cold-
ness of water upon mixture. But, we must take
care to avoid the common error of imagining, that
waters impregnated with these or any other salts, are
always to be found cold in proportion to the degree
of saturation: For, these and all such like solutions
must come to the temperature of the atmosphere,
or vessel, in which they stand. So that, though
the cold of water be sensibly increased upon adding
these salts till they be dissolved; yet, the coldness
sensibly decreases, in proportion to the warmth of
the air, as soon as the solution is completed; after

which, the heat or cold of the water will depend upon other accidents, as before observed.

The judicious will also be cautious in the use of waters, thus diversly impregnated; as their effects upon the solids and fluids must be very different from that of simple water.

II. Of Temperate, Warm and Hot Baths.

The antients, whose experience taught them the uses and virtues of baths in general, were most exact in the divisions and distinctions of them, as well as in the manner of using them. In a regular well constituted bath, there were all the conveniences for softening and cleansing the skin and its pores, by sweating; by hot and cold immersion, washing and bathing; by inunction, friction, &c.

An antient bath consisted of four principal parts, by some called the houses or chambers.

1. The first was a kind of stove, known to the Greeks by the names of ὑποκαυστον, Hypocauston, προμαλακτηριον, Promalacterion, to the Latins, by the appellations of Laconicum, and Assa^a. This was composed of three close chambers, of convenient sizes, contiguous to each other, all brought to different degrees of heat, by means of stoves properly placed. In the first of these, the air was but temperately warmed; in the second, it was rendered tepid, or more warm; and in the third, it was heated.

* Through these stoves, or some one or more of them, every person went into the warm, humid, bath, without suffering the violent shock, that must attend

^a CELS & CICER.

* As our judicious author highly disapproved of the modern stoves, such as are to be met with in the common hammams or bagnios, he never would allow that the stove of the antients bore the least similitude to them; in the antient stove he conceived

were

attend going from cold air into warm water, which appears or feels hot, in proportion as the body is before cooled. Here, the change was gradual, insensible and agreeable to the whole oeconomy. In these stoves, the body was by flow and almost imperceptable degrees warmed; the humors liquified; the pores and ducts rendered free and open; and perspiration promoted to the wished for point.

2. The second was contiguous to the first and composed of a chamber of a convenient size, in which were three large cisterns of water of different degrees of heat. The first, of a blood warmth, the second, warmer, the third, as hot as could be borne. This was called, by the Greeks, *αποδυτήριον*, Apodyterion, and *περιαιτήριο*, Periatierion; by the Latins, Tepidarium, and Calidarium; though these appellations were by some bestowed on the first part of the bath, where the bathers undressed. Into one or other of these, the patients was conducted from one or other of the stoves, as the nature of his case and circumstances directed. For this, the stove was justly looked upon as a proper, the true preparatory. In this, the hardened, contracted or rigid

were performed all their dry fumigations, where the patient was rubbed and prepared for the bath, in a small apartment, strongly impregnated with the vapor of some greatful gum or aromatic essence, sprinkled on a red hot pan or iron, by which the room was moderately heated. Whereas, our present stoves are heated by fire, conveyed by flues: Consequently the brick, plaister, and tiles, with which they are built, emit a dry, sulphurous, suffocating vapor: in which the patients are kept until they nearly expire, from whence if they happen to escape, they are notwithstanding loaded with this poisonous effluvia, and put into the warm water bath, which, even then, were it properly regulated by a just degree of heat, might extract or dilute these noxious vapors, taken in at the pores in this relaxed state; but it rarely happens in such places, that either their stove (which by the way is the most diabolical place a human being can be put into) or bath, is brought to any fixt degree of heat; the utmost degree of heat which the patient can endure in either, without the least consideration of his case, seems to be their general standard.

fibres

fibres were softened and relaxed; the humors diluted and molified; obstructions resolved, pores and other passages opened; pains and rigors assuaged; and rest procured.

Care was taken, that the cisterns or baths were large enough, not onely to contain a body in the proper posture at ease, but to admit it to move with freedom: For, though almost all motion, especially all exertions of the chest and lungs were prohibited, to the tender and weak especially; yet, it was rationally judged expedient, they should not be cramped for room, nor in the quantity of water, on which much depends in many cases. The public baths were made large enough to take in numbers at once.

3. The third part of the antient complete bath was another chamber constructed like the second, contiguous thereto, and furnished, like that, with three cisterns or baths, containing severally, water of different temperatures. The first contained water moderately warm, the second, tepid, or slightly warm, and the third cold water. This was called, *Frigidarium*, the cooler, or cold bath.

Thus did the antients furnish themselves with means to alter their habits of body, by air of different degrees of heat, by water of different degrees of heat and of cold. They prepared their patient for the degree of warmth in the water, they judged necessary for his health, by an appropriate degree of heat in the *Hypocauston* or Stove; and as the transition from the cold air, to hot water, was rendered easy, familiar and agreeable, by the different degrees of heat in the stoves first, and then in the *Tepidarium* and *Calidarium*; so the shock to be dreaded from the admission of cold air upon a body just come out of an hot bath, was effectually obviated, by the third part of the bath, the *Frigidarium* or cooler; where the patient was gradually cooled, in two baths, the one cooler than the other, before he was immersed in the cold bath, which was calculated to brace up the relaxed fibres, to constrict

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the pores to their natural diameters, and to concentrate and retain the native and acquired heat. By which, catching cold and all such like accidents must have been happily prevented *.

4 Finally, the fourth part of the antient bath was the dressing chamber. This lay contiguous to the second and third. It was a close, convenient room in which the Bathers were dried and cleansed, had their skins scraped and rubbed, with proper scrapers, flesh-brushes, and coarse woollen cloaths, and anointed with fit oils or unguents, to keep the skin soft and prevent the waste of strength by excessive transpiration. After which they dressed themselves in it.

Thus, were the antient Greeks and Romans provided with the most simple, easy, natural, and agreeable method of preserving present and re-establishing lost health, by the different management and application of that most noble, but, with us, despised and neglected remedy, common water. And whoever considers, besides the neatness and elegance

* Such regular gradations of heat and cold appear best in theory, here are three stoves and three baths all of different degrees of warmth, and three more baths all of different degrees of coldness, to make up the course of one regular bath. Now the antients who habituated themselves to the constant use of warm bathing, even when in the most perfect state of health, might not only be able to go through these several changes, but find an agreeable variety in them. But in these countries where few are sent to the baths but the helpless and valetudenarian, who would nearly, if not in some cases altogether expire, before they could go through the several gradations of heat and cold, the case is quite changed, nor is it probable, that the robust and healthful, several of whom, (either from the most pleasant and healthful amusement, or the most luxurious refreshment, begin now to frequent the baths) would choose to go through such a variety of baths; therefore, whatever deference our author pays in other respects to the antients, he preferred the system adopted at the Dublin baths as best suited to this climate and people, for without disturbing, in the least, our bather, we can by our vapor or fluid, turn cocks, render our baths hotter or colder, or bring them to the most minute point of a fix'd degree of heat or coldness.

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of keeping the skin sweet and clean, the great necessity of keeping up those great and most important discharges, that must constantly, in an healthful state, transpire by the pores of the skin, the suppression or obstruction of which lays a foundation for the worst diseases incident to man; must lament the shameful disuse of bathing, hot and cold, that prevails in our days.

Though the antients were thus wisely furnished with the necessary variety of baths under one roof; we are not to suspect, that every patient was obliged to go through a course of all the stoves and all the baths at once: No; they were calculated for the variety of cases, constitutions, and different seasons of the year, that occur; and the patients, according to their respective circumstances, were directed to use the one or the other, as it proved most expedient and requisite. Thus, cold and phlegmatic habits were destined to the hot stove chiefly; and occasionally, to the hot bath; dry and hot temperaments, to the tepid stove and warm bath; the soft and lax fibre to the cold bath, and so forth: For, as the stoves heated and dried in different degrees, they could only be serviceable in those cases, where heating and drying were the curative indications. Thus, they became fit for the cold and phlegmatic habit, in anasarous, oedematous and hydropic cases; whilst they became improper for the hot and dry temperament, whether in a natural, healthful, or a morbid state, where moistening and softening were the only indications: For these like constitutions, the second part of the bath, and likewise the third were most proper; whilst they must have been totally unfit for cold and moist habits. But, the fourth part was more or less necessary to all, that required any of the others, either for cleansing, rubbing or anointing the skin, or for dressing in.

The wise practitioners among the antients cautioned all that were to use any of these baths against the rash and indiscriminate application of them.

They

They strictly forbid them to all plethoric, gross or full persons, before due evacuations. Because, the rarefaction of the redundant juices by heat, dry or moist, and the sudden and violent impulses made upon them by the cold bath were alike dangerous and destructive; till the fulness was by proper means abated, and the humors had full scope to circulate freely allowed them. They were also forbidden to go into the Baths with their stomachs or lower intestines charged with food or excrements; least crudities might be impelled from the first into the second passages, and thereby obstructions or inflammations formed. Persons with weak or obstructed bowels were also prohibited the use of baths; least a flux of humors might be invited or propelled to the debilitated bowel, by the hot or the cold bath. And for the like reason, that persons using the cold bath were directed to immerse the head, with or before the rest of the body; so, those, who were to use the warm bath, were cautioned not to dip the head in the warm water; for fear of over-heating, relaxing or replenishing the brain: For, omitting to immerse the head with the body, in the cold bath, or immersing it in the hot, must alike subject it to an influx of humors, which, in most cases, may prove detrimental, if not destructive.

As the cold bath may be medicated with various minerals, so may the hot be impregnated with an infinite variety of bodies from the mineral vegetable or animal creations. Those medicated with minerals, are either natural or artificial. The natural hot baths are called *Thermæ*, and are either simple or medicated. The simple are such as consist of pure water, whether meteoric or terrestrial, heated in its passage through the earth. Of this kind are the Baths of *Pfeffer*, *Schwaldsbadt*, *Toeplitz* or *Toepliz*, in Germany, *Schlangenbaden* and *Hirschbergen*, in Silesia, and divers others, which equal the purest rain water in levity and simplicity, and whose extraordinary

virtues are onely to be ascribed to the purity of the waters, &c. The medicated natural Baths are such as are charged with salts of different kinds, with sulphur, with earths, with metals, and other minerals. As the waters of Bath and Bristol, in Somersetshire, of Aken or Aix la chapelle, of Borset, and Chaud-fontaine, in Germany, of the Caroline Baths, in Hungary, and others, of which apart in their proper places.

The arteficial medicated Baths are such, as are charged by art with various salts, sulphur, &c. according to the intention of the prescriber. Baths, medicated with vegetable or animal bodies, are always arteficial. Of these, there may be an extreme variety of different intentions; as emollient or relaxing, tonic or astringent, &c. All warm baths may and should be rendered grateful to the patient by the addition of some aromatic plant, flower, seed, or other vegetable substance, appropriate to the case; though the great stress is to be layed on the simple water alone, to which I shall confine what I have further to offer on the use of warm water, topically applied, in the relief of internal, as well as external disorders.

In order to judge the better of the uses and efficacy of warm baths in the relief of various distempers, incident to mankind, let us first consider the mechanical operation of water upon the animal solids and fluids, agreeable to the nature and properties of simple water, as before layed down.

We have already endeavored to explaine the operation of cold water; part of which is to be taken into the estimate of the action of warm; to wit, its gravity; though this be decreased sensibly, volume for volume considered, in proportion as the water recedes from cold to hot. The other qualities, in which the effects of warm water are different from those of cold, arise by accident from the heat, which produces a contrary effect from cold.

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It has been already observed, that solid and fluid bodies are condensed by cold, and expanded and rarefied by heat. Hence, the animal fibres, which upon immersion in cold water, are constringed and contracted; in warm water, are softened and relaxed. And the animal juices or fluids, which are condensed and propelled from the circumference towards the center, in cold bathing, are rarefied in proportion to the heat, invited from the center to the circumference, where the vessels, by being relaxed, have their diameters enlarged, and therefore more readily yield to the influx and rarefaction of the humors. The mean while, the pores are freed from all foulness, soluble, or capable of dilution in pure water; which the natural discharges by these ducts are. And, by the rarefaction of the blood and the extraordinary dilatation of the heart and the blood vessels, the pulse is raised, the circulation becomes more vigorous, the heat consequently increased, the surface of the body grows red, and the pores of the skin discharge their contents, with freedom and ease.

To this, add the gravity of the water, with the extreme subtilty or tenuity of its parts, and it will be easy to conceive what effects it must produce upon an animal body immersed or bathed therein. The blood, more than ordinary, heated from without, may be supposed most powerfully invited towards the parts most heated and relaxed. But then, the pressure of the water, which is calculated by geometricians to be eight hundred times heavier than air, balances, in some measure, the rarefying power, and forces the blood back again towards the center, that is, into the great bowels and vessels, whilst it dilutes the whole mass, by the intromission of some of its subtilest parts by the insorbent pores. Hence, the intestine motion of the constituent parts of the blood is considerably increased, by which its viscidty is broken and resolved; obstructions in general,

neral, from that cause, are removed, and the secretions and excretions properly promoted.

From these mechanical and demonstrable effects of warm water, by its heat expanding the solids and rarefying the juices, by its gravity compressing the external vessels, and thereby forcing the blood, in them heated and rarefied, into the heart, lungs, brain and other bowels, or into the larger internal vessels; the evils produced by too hot, and the general unadvised or ill-judged use of warm baths, are easily accounted for, and from them, judicious, practical inferences and cautions may be drawn.

There is nothing of greater importance to the patient, for whom warm bathing is found proper, nor in which the honor of the prescriber of this bathing is more concerned, than the ascertaining the fit times and seasons, the regulating and preparing the state and temperament of the body, for bathing; the determining the kind of bath, and its temperature precisely, together with the space of time necessary for tarrying in the bath, with due accuracy.

Without the strictest observance of these cautions, mischiefs infinite must ensue. Thus, we find unfit subjects, or the best prepared, upon going into ill-regulated baths, or tarrying too long in them, attacked with head-aches, even to a frenzy; with anxiety and palpitation of the heart, with faintings and swoonings, &c. These complaints, or some of them, are always likely to attend soft, delicate constitutions, with relaxed fibres; especially, if the bath be too hot. Such as are sanguine and gross, with the intestines and other bowels full, must be liable to obstructions, inflammations, fevers, continual or intermittent, with variety of other disorders depending upon the particular circumstances of the health and habit of body, upon the seasons of the year and the nature and temperature of the water. The more compound the water is, especially
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with astringent, styptic or absorbent matters, such as alum, vitriols or earths, which constringe, costipate or clogg the pores; the more subject will the patients be to fevers. An observation, which should make men most cautious in the use of baths, whose waters are loaded with any of these mineral matters; as the Caroline Baths in Hungary, ours in Somersetshire, those of Borset near Aken, and the like.

Hence, every judicious person will with me conclude, that the softest, lightest, purest water, as it is the best for all the purposes of the oeconomy of life; so is it also preferable to all others for warm baths; except, where the additional force of a subtil, mineral spirit, of subtilised sulphur or its elements, or some alkaline or other resolvent and deterfive salt, such as are found in the natural *Thermæ*, or may be occasionally added in factitious baths, may be judged expedient for particular purposes and in extraordinary emergencies: For, whatsoever is found capable of obstructing the first and great intention of warm bathing, softening and relaxing the fibres in general, particularly those of the skin, and its pores, which are cleansed and opened thereby, and prepared to yield their contents by sweat and transpiration: whatever, I say, is found repugnant to these intentions, renders warm bathing of none effect, if not perilous. This is easily conceived, upon considering some of the infinite variety of evils, that necessarily attend the obstructing the pores at any time and in any manner; especially, at such times, as the blood is greatly heated. Thus, the common diaphoretic or sweating medicines prove injurious and often destructive, by their heating the blood, when the pores are not disposed to open and yield their contents. Hot or warm bathing must heat and rarefy the juices, as well as expand the solids. The pores must at this time be greatly distended or relaxed; and consequently, if the water be charged with astringent, drying, terene bodies, the pores may be so clogged
and

and obstructed therewith, as to counteract the warming and softening quality of the bath, and thereby prove of extreme evil consequences.

Though bathing may, at first sight, be looked upon, as in strictness it is, a topical application; yet, as no topical medicine can be so circumscribed in its operation, as to affect the outward parts, to which it is immediately applied, onely; so none outward application more sensibly affects the internal parts, even the universal frame, than warm bathing. And when we come to consider the vast variety of internal, as well as external maladies, for which this most simple, yet powerful application, has been found an approved remedy, from the earliest ages of the healing art; we shall find, that all our modern boasted improvements in anotomy and physiology, and in the mechanical accounting for the operations of medicines, will appear in judgment against us, and reproach us for our shameful neglect of one of the most effectual remedies, with which bountiful nature or human art has furnished indigent mortals.

The general estimation and uses of warm water, among the antients, may be conceived from the authority of the GREAT FATHER of the medical art; who in his aphorisms tells us, that warm water softens the skin, attenuates the humors, assuages pain, mitigates rigors or contractions, convulsions and distensions of the nerves, or contractions of the tendons, and cures disorders of the head ^a.

This grave authority is followed by that of ARISTOTEL, VITRUVIUS, PLINIUS, CARDANUS, GALEN, ARETAEUS, TRALLIANUS, CELSUS, PLATERUS, PR. ALPINUS and many others, to which the great HOFFMAN ^b adds no small weight. Besides, every

^a Calidum, seu Therma, cutim, emollit, attenuat, dolores tollit, rigores, convulsiones, nervorum distentiones mitigat, capitis gravitatem solvit, &c. HIPPOCRAT. sect. v. aphor. 22.

^b De balnear. aquæ dulcis usu in affect. internis.

man of sense and judgment approves it; yet, to our hardly delible reproach, the jokes of the ignorant vulgar, who despise every thing common or known, and who are to be fed upon secrets and mysteries; or the idle sneers of an humorous satyrift, are enough to exclude it the book of modes, and of course, to cast it totally out of practice.

Let it be mine ungrateful task to stem this torrent, and strive to oppose such of the potent living practitioners, as have run into this shameful neglect of the best of remedies, with common reason, not the farcical fashion, that has long disfigured the fair face of physic. In this unequal contest, I shall be allowed to take to my seconds some of those illustrious dead, whose works have made them immortal, however their precepts and example, in this instance, come to be neglected in our days,

From the mollifying and relaxing power of warm water, mentioned in the late cited aphorism, together with its quality of diluting, attenuating, and rarefying the juices; its extraordinary efficacy in assuaging the pains of inflammations, in resolving and relieving distentions, contractions, spasms and convulsions, in warming and invigorating cold, emaciated and paralytic limbs, is derived.

Many and innumerable are the services, that warm water, outwardly applied, may effect in various disorders and distresses of the human body.

In hard and difficult child-bearing labors, where from the extraordinary size of the infant or the inordinate constriction or rigidity of the parts, when men have recourse to the most violent measures, such as threaten the destruction of both infant and mother; warm bathing might so soften and relax the fibres, as to bring the most speedy relief to both. Had due regard been payed to this most safe and rational practice, there would be less occasion for horrible instruments, or the herculean strength, now asserted to be necessary, and there would be fewer dreadful disasters,

ters, than we daily see or hear of, in the modern masculine practice of midwifery.

The like easy succor might be afforded in the suppression of urine, or in that of the menstrual or habitual hemorrhoidal discharges, when such arise from an undue tention or constriction of the parts, or a viscosity of the juices. Warm bathing so softens and relaxes the fibres, as to enlarge the diameters of the vessels; and while it dilutes and attenuates the juices, by its pressure upon the external parts, it promotes the propulsion of noxious matters by the proper excretories. For all these like cases, universal bathing is not necessary; the half bath, otherwise called, *Encathisma*, *Infessio* and *Semicupium*, is sufficient; in which the patient sits up to the navel or region of the stomach in warm water, the superior parts being kept dry and covered.

There is another kind of partial bathing celebrated for its great efficacy in the relief of heavy and acute pains of the head, inflammations of the eyes, dry and convulsive coughs and asthmas, hypochondriac and hysteric melancholy, palpitation of the heart, cholic, &c. by the best practitioners, ancient and modern. I mean the *Pediluvium* or *Lavipedium*, the bathing the feet in warm water; by which the pores of these extremities are opened, the fibres softened and relaxed, the diameters of the vessels enlarged, and a flux of humors invited or derived to these extremities, to the relief of the more noble parts oppressed. Yet, this admirable method of practice, which has its foundation in true physical reasoning, and is confirmed by the experience of ages, is now more frequently abused by old women and nurses, than recommended by regular physicians!

But, the greatest efficacy of warm bathing is found in violent constriction or costipation of the pores of the skin or the excretory ducts and passages, attended with contractions, distentions, spasms and convulsions, with extreme pain.

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In these cases, warm water brings the speediest relief, and that for the following among many obvious reasons.

The skin, as has been before observed, is the common integument or covering of the whole body. It may be looked upon, as the common emunctory: For, we can conceive no web, that has more perforations or pores, than the human skin. Through these, there is a constant uninterrupted discharge, which surpasses in quantity all the other discharges of the body, and on the regular performance of which the health of men does especially depend. This discharge, in the most healthful state, is of a greasy, clammy nature; liable, if not frequently rubbed or washed off, to cause itchings, eruptions, excoriations, to stench and putrefaction, and to clogging and obstructing the excretory ducts or pores; which are so many common sewers to a city, to carry off redundant humors, which retained, must turn to putrid filth and nastiness.

The worst disorders, incident to man, derive their origine from the later cause, to wit, obstructed perspiration. Our first care then should be to preserve this discharge in due regularity, or to restore it, when by any means suppressed.

This, in many cases, is most effectually done by the rational use of warm bathing; by which the discharge is kept up, the suppression removed or obviated, and thereby the train of evils attending the suppression, cured or prevented.

The operation of warm water, in this and the like cases, may be accounted for, from what has been already said, particularly in treating of the nature and properties of water: It must dissolve and wash away the perspirable matter, and thereby remove the obstructions of the pores; it must soften and relax the fibres, dilute and thin the fluids, promote a free and regular circulation of the blood, increase its

motion; and promote the secretions and excretions, in which the cure of these disorders consists.

As there is nothing more conducive to the health of man, than the keeping up this discharge, whose retention is found so noxious; the great and remarkable efficacy of warm bathing in promoting it, and thereby preserving or bringing about the most salutary depuration of the juices, will appear from considering the effects it produces in sundry distempers arising from a morbid state of the juices and the suppression of the cutaneous discharges.

Many chronic and most acute diseases are brought on or aggravated by obstructed perspiration: Nor can any of them be effectually cured, without restoring this most necessary discharge.

In most Fevers, the antients had recourse to warm bathing. But most especially in the intermittent, in which they prescribed them, especially in the intervals, and upon the decline of the paroxysm. The reason for this salutary practice, which is authorised by HIPPOCRATES GALEN and CELSUS, may well be collected from what has been before said; as the juices are found viscid and sily, the circulation languid, and the perspiration suppressed or obstructed.

In burning and continual fevers, warm bathing was recommended, once and in the beginning of the access, by some of the best practitioners among the ancient Greeks^a.

The Egyptians used the like practice: For, we are told, that the use of warm bathing was common and familiar to that people in all fevers, whether ardent, putrid, continual or intermittant; with exception to the pestilential onely: but, not so much upon the commencement, as towards the decline of the fevers^b.

^a GALEN, l. viii. cap. 3. Meth. medend.

^b PR. ALPIN. de

Medic. Egypt.

TRALLIAN greatly recommends warm bathing in tertian fevers; especially in hot and dry habits of body, and before the concoction of the morbid humors is performed^c.

GALEN recommends it also in the like cases and upon the same conditions; and says, that it cannot annoy, if it be administered twice a day.

CELSUS is of the same opinion; but recommends the bathing, the first day, the fever intermits^d.

HOFFMAN confirms this method of practice, especially after clearing the first passages by aperitive, saline medicines; wisely and justly judging, that the morbid, febrile matter can not so effectually be discharged by any other emunctory as by the pores of the skin^e.

PLATERUS used warm bathing with success in quartan fevers, on the days immediately preceding the fit^f.

But, the Father of physic inculcates this sage caution, that bathing be not performed in the access, or during the paroxysm^g.

The use and reason of a practice, thus supported by the best authorities, must be evident to every man endued with common sense and a competent judgment in physic; yet, we unfortunately find it almost quite exploded.

But, these kinds of acute diseases are not the only maladies, whose malignity is best carried off by the pores of the skin: For warm bathing is still found most universally effectual, in the relief of chronic distempers.

Before we come to give instances of these, I shall mention one kind of acute disease, for which bathing is found the most effectual remedy. I mean that most dreadful of all fevers, which attends the bite

^c Lib. xii. p. 735. ^d Lib. ii. c. 17. ^e Tract last cited. ^f Lib. iii. Obs. p. 281. ^g HIPPOC. de morb. mulie

of mad dogs and other enraged animals, and is attended at the same time with an insatiable thirst and such a dread of water and other liquors, as occasions horrors and convulsions at the bare sight of any of them. This stage of this most horrible and shocking disorder is called, the *Hydrophobia*, or dread of water. And for the cure of it, sudden and unexpected immersion, and long detention, in cold water has been recommended from earliest antiquity as the sole remedy^a. After which, the patient was to be rubbed with, or immersed in, warm oil, and then disposed to sweat, by covering up close in a warm bed and giving rich wines and other cordials, in which the cure consisted.

But, though cold water might well produce this effect; yet, it certainly was more likely to be speedily and completely performed by warm water. And accordingly we are informed by *Celsus*, that a person, bit by a mad dog, was immediately carried to a bath, where he was bathed and sweated, as long as his strength would admit; leaving the wound open, for the freer discharge of the malignant matter. Then, as the most sovereign antidote for all poisons, they gave him plenty of rich, generous wine. And having continued this course for three days, they judged the patient cured. But, what seems to countenance the warm, in preference to the cold, bath, we have from the same authority: For, *Celsus* in the same book and chapter tells us, that if any distress to a delicate body was apprehended from the cold bath, which sometimes brought on distentions of the nerves on convulsions, and the death of the patient; to prevent this, he was to be immediately after the cold, bathed in warm oil. Which shews that warm bathing is more safe and effectual than cold.

^a *Cels.* Lib. v. c. xxv. *SENNERTUS*, *HILDANUS*, and all the practical writers. Also page 23.

In confirmation of this practice, HOFFMAN^a cites a case, communicated by a certain German physician, to this effect: A mad wolfe ran out of a forest and bit great numbers of unfortunate men in the neighbourhood. Many of these men died before any remedy could be found. At length an illiterate boor hit upon an effectual cure. He gave each bitten person a dose of Venice treacle and the spongy fungus of the dog-rose, or briar, which is the nest of a certain insect, and afterwards put them into a moderately warm bath. He continued them there a considerable time, in order to prepare them to sweat plentifully, and repeated this process for several days successively, which was at length attended with the desired success. By which we see, the cure of this virulent fever, as well as that of others, was effected by softening and relaxing the solids, cleansing the pores, diluting and attenuating the juices, inviting them from the centre to the circumference, and causing the malignity to be thrown off by sweat.

When we consider the immense quantity of fordid and offensive matter, that is cast off by the pores of the skin in bathing, we shall cease to wonder at the variety of distempers, as well chronic as acute, which are remedied by warm bathing.

There is hardly any human skin so clean as not to foul a large quantity of warm water, upon bathing in it. And a bath, once used by the cleanest person, is very apt to corrupt and putrify. In baths, used by some persons, a gross fat substance has been found afloat, in such quantities, as to be capable of being collected like fat upon broth. Of this kind, some remarkable histories are given in the *Miscelanea Naturae curiosa*. I shall here only recite two^b. The one, of a woman, who after having tried all other remedies in vane for a pain in her loins, at length

^a Tract last cited.

^b Deced. II. Ann. vi. Obs. 239.

had recourse to warm bathing, by which she was happily relieved. And a gross fatty substance was always found floating on the bath. The other, of an hypochondriac person, who upon bathing made the water smell most offensively, and left a gross, thick, black scum afloat on it. These daily increased with such a degree of acrimony as blistered the bather or attendant's hands; till at length, the discharge ceasing, the patient was relieved from his complaints. And the celebrated VOLCKAMERUS tells us of a woman, whom he cured by the same means; who discharged a considerable quantity of this kind of filth every day in the bath.

It is certain, none other known medicine could so effectually bring away this noxious filth, through the pores of the skin, as warm water; wherefore, in all cases, where a discharge of that kind is to be promoted, warm bathing must prove the most safe and effectual remedy.

Gouty and rheumatic paroxysms are the most painful and distressful, when the patient or parts affected do not sensibly perspire; and the distresses are always mitigated by gentle sweating. Nothing sooner takes off the tension and crispature of the fibres and assuages the attendant pain; nothing cleanses and opens the pores and disposes the patient to a mild and gentle sweat, so effectually, as warm bathing. Consequently it well deserves the attention of physicians in these intentions.*

Scorbutic

* HOFFMAN, Tract last cited.

As there are no disorders incident to human nature more acutely excruciating, so there are none in which well timed and regulated bathing gives greater relief; but as our amiable Author, throughout his whole Theory of Bathing, depends much on the judgment, and care of the prescriber, he here calls upon their particular attentions, with the utmost degree of propriety, for certainly disorders so dangerously critical, cannot be treated with too much consideration.—I would therefore humbly submit it to

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Scorbutic complaints of most kinds are aggravated, if not induced, by obstructed perspiration, The rational cure of every stage of this disorder, especially that attended with acute pains in the limbs, consists in disposing the humors for discharging the morbid matter by the pores of the skin. This is done by dilution with simple water, warm bathing, and the use of acids and other diaphoretics *

The last stage of the venereal evil, that most foul, noisom and excruciating distemper, in warm climates, where transpiration is most free, is much less noxious and distressful, than in these northern regions. In Italy and other countries, where they have plenty of natural baths and stoves, many men keep this distemper moderate during their whole lives, by a course of warm bathing and sweating, performed once or twice a year. And it is certain, that with us, it is never so well cured, as by those practitioners, who determine the morbid discharges

the better judgment of the faculty, whether upon the earliest indication of a fit, it would not be expedient to have recourse to the half or whole bath, for some time, in order to promote perspiration, to dispose the pores of the skin, to discharge the offending matter, and whither towards the end of the paroxysm, they ought not again to have recourse to them, and if it would not tend much to lessen the fit, to render it more regular and less painful; were the patient in the intervals to make an alternate use of cold, tepid or hot salt water, or vapor baths.

* The method of cure herein prescribed by our Author, I have experienced in various stages of this distemper, and indeed, joined to a proper regimen and medicinal sweetners of the blood, there is no height which this dreadful disorder has attained to, that will not in time submit to this rational mode of treatment, and it rarely happens that a radical cure is to be effected in any other manner; therefore, I would again submit it to the gentlemen of the faculty, in all cases of this sort, but particularly, when the surface of the skin is disfigured by the offensive and acrid matter, or where it appears in, what is called, the ring worm, red pimples or blotches, or the more confirmed scaly kind, whether the constant use of the vapor or fluid warm baths, simple and impregnated would not produce the happiest effects.

most

most by the pores of the skin, by the means of warm baths and stoves. Nor, do I believe it can ever be certainly cured, but by these means, and upon these principles. How many wretches do we daily see harrassed to distraction and almost to death, often reduced to the worst hectic state, by long, tedious and violent salivations; yet, after a few days respite, again tortured with the same pains and other direful symptoms, for which they were forced to undergo this most severe and unnatural regimen? Some of these unhappy sufferers, we see escaping from some sordid cell, contentedly hugging himself upon the happiness of his cure; when, in less than a month, all his former complaints rage with more than double fury. If such fall into the hands of the injudicious, they are again put into another mercurial course, in which they rarely meet with better success; except, in having an end put to all worldly evils by death. How are they then to be cured, before matters are brought to this last extremity? By bathing and sweating onely; without which, the body can never be effectually prepared for a mercurial course of any kind; nor can that course be duly completed without closing it by frequent bathings and sweatings, which are sometimes properly and necessarily interposed during the course. Thus, we see patients, which after one, two and more salivations and divers drenches with mercury in various other shapes, in order to vomit, purge or sweat, to little or no good effect; upon falling into the hands of the judicious, cured by warm bathing, gentle sweating, and the use of a few sweetning, which are all diaphoretic medicines. Hence, it appears, that warm bathing and sweating is in itself a palliative, if not a radical cure for the pox; that it is the best preparative for a mercurial or other diaphoretic course, and that when such a course has been pushed to the utmost extremity; some of the old leaven of this foul disease generally remanes in the mass of humors, which can best

best be expelled, by the pores of the skin, duly disposed for sweating and cleansed by a proper warm bath*.

There are no chronic disorders more rife among us, and which, after a certain standing, are more rarely relieved by medicine, than Hysteric, Hypochondriac and Maniac affections. Yet these, I apprehend, may be greatly helped, if not often happily cured, by the judicious application of water internally as well as externally.

The sufferers under these melancholy diseases are more or less subject to indigestions, obstructions of the natural discharges; not onely by the pores of the skin, but by the other emunctories; as well as to suppression of the menstrual or habitual hemorrhoidal fluxes; to an unnatural constriction or costipation of the bowels, of the intestinal channel in particular; with an interruption of their vermicular motion, with spasmodic contractions and convulsions, and in time with obstructions of the liver, spleen, pancreas and mésentéric glands.

From the irritation, compression, constriction and other distresses, these membranous and nervous parts, of most exquisite sensibility, must suffer in these circumstances, the whole nervous system must sooner or later be affected; every juice must degenerate, every function be interrupted, if not obstructed.

* Whether venereal symptoms may in such cases re-appear from some of the unsubdued leaven, or from intemperance, colds, &c. during a mercurial course, I believe is hard to determine with any degree of precision; probably in some cases the constitution may be injured from both.—Yet, I verily believe, that the abuse of mercury causes many symptoms which may be esteemed venereal by the most intelligent practitioners, and I am also of opinion, that many of our modern rheumatic complaints and other chronic distempers, which commonly fall under the denomination of nervous, are to be attributed to the abuse of that noble medicine. I have in the appendix given the case No. 4. and I have met with several of a similar nature, from whence I would infer, that a course of bathing after a salivation seems to promise the most certain method of cure, and the freeing the constitution from the ill effects of mercury at the same time.

If these distempers commence from those disorders in the first passages and other lower bowels, our first care should be to restore matters to rights in these parts. And it is clear, that nothing can be thought or found so effectual in mollifying and relaxing the indurated and crisped fibres, in resolving the unnatural constriction, costipation, obstruction and compression of the intestinal bowels and glands, and in assuaging pains, spasms and convulsions in these parts, as warm water internally taken and externally applied in baths or semicupia. By these, a freer and more equal circulation, with all its consequences, are happily restored; and the brain, which was oppressed by the influx of the whole crude mass, is relieved by the invitation or derivation of the humors towards the belly and lower extremities; whose vessels, in the disordered state, were incapable of receiving a due proportion of the blood, especially those of the limbs, whose vessels are commonly constricted, in these cases, by an unnatural coldness.

In these circumstances, we frequently see the most violent pains of the head relieved by a pediluvium or bathing of the lower extremities in warm water. And in the fair sex, when uterine obstructions bring on, with pains in the part first affected and contiguous bowels, convulsions and even epilepsies; they are often cured by the judicious use of warm bathing alone, and can seldom or never be cured without it: For, if this be not premised, most hysteric and deobstruent medicines may not onely frequently fail in their effects, but often prove dangerous and destructive. But, after the fibres of all the solids and the juices are, as before explained, altered by warm bathing; after the lower bowels are relieved from their constriction and compression, by this means; not onely in hysteric, but in hypochondriac affections; then, not onely all the appropriate afficinal remedies are given with the utmost safety and desired success, but the mineral waters, particularly the chalybate, exert

ert their power and efficacy most remarkably, most happily *.

Warm bathing, for the like reasons, had long been an established and approved remedy amongst the antients, in all kinds of Mania or Madness; tho' in this, as well as other respects, it has become so much neglected by the moderns.

TRALLIANUS recommends long and frequent warm bathing, especially during the summer season, in melancholy madness ^a.

ARETAEUS advises warm bathing in the same complaints, and upon the like principles, with those we have layed down ^b.

Of the same opinions are CAELIUS AURELIANUS ^c and PROSPER ALPINUS ^d. The former of which recommends the natural nitrous baths, those especially, that are inodorous and inoffensive to the brain; the later recommends universal bathing, but particularly, the pumping warm water upon the coronal suture; by which, he says, many were happily cured; yet, it is a practice, not quite agreeable to the principles, upon which warm bathing is in general recommended, in disorders of this class.

The disorderly, constricted and obstructed state of the bowels of the lower belly, which cause or aggravate hysteric, hypochondriac or melancholy affections, are not the only complaints, in these parts, for which warm bathing proves a sovereign remedy: For, it is not less effectual in all violent griping pains,

* The truth of this part of our Authors theory, is fully well confirmed by the annexed cases in the appendix, N^o. 2 and 3.

^a Dulcium balneorum usus, si quid aliud, melancholicis opitulatur: Et paulo post—Ægri in balneo morentur diutius, ac in calidum descendere cogantur, omnino etiam, si aestas fuerit, in eo diutius de fideant. Lib. i. p. 107.

^b Melancholicos in aquis sponte calidis sæpe commotari, necesse est; raræ enim & molles ad egritudinis remissionem maxime faciunt, verum siccae & tensae, melancholia laborantibus, carnes sunt. Lib. vii. m. 134.

^c Morb. chron. Lib. i. p. 335. ^d De Medic. Ægypt. p. 115.

convulsive and nephritic colics, and all such disorders as arise from a dry, tense or costipated state, where there is no violent inflammation attended with a plethora or fullness; in which case, venesection should be premised to warm bathing. By this means, the easy propulsion not onely of hard or indigested matters, of long-retained and indurated excrements in the intestinal channel is promoted, but the discharge of fabulous or calculous concretions in the ureters or urethra is happily facilitated, by the softening, relaxing and dilating the passages. The operations of the bath in all these like cases are assisted by the internal use of warm water in softening apozemes and brothes, or mixed with oils and some gentle stimulating, neuter salts, or soap.

This method, in this sort of nephritic disorders, is not onely countenanced by the best writers and practitioners amongst the moderns, but has been early in use among the antients; as TRALLIANUS^a and ARETAEUS^b testify; particularly the later, who recommends, in such cases, the semicupium, which almost instantly eases the excruciating pains attending the obstructions of stone or gravel in the tender membranous passages; provided the water be not too hot, and the patient too full and sanguine; in which cases, it may be hurtful, without due evacuations, and other necessary precautions.

Thus, we see what a vast number of distempers, external and internal, acute and chronic, may be relieved by the methodical use of water in warm, as well as cold baths. To which may be added this useful remark, that by warm water properly applied, the operations of many of the most potent, herculean medicines are at the same time mitigated and rendered more efficacious. Thus, for example, all the powerful sudorifics exert their force with more mildness and efficacy, upon having the humors thinned and rarified, and the solids softened and relaxed, than they could otherwise do; without this preparation,

^a P. 543 & seq.

^b P. 18.

they

they may heat and distress, but may fail of promoting sweat; whereas, after it, they can neither offend nor fail in the effect.

The antients, with great wisdom and judgment, premised warm bathing to the use of their hellebores and other drastic purges and vomits; by which they not onely obviated the pains and spasms, which might otherwise attend the use of these harsh and rough-operating medicines, but more effectually prepared the solids and fluids to throw off peccant and morbid matters, with the greatest ease and safety. All courses of mercury, whether for promoting sweat or salivation are rendered much more safe and effectual by warm bathing. Nor can such a course be with propriety instituted or finished, in any case, without frequent bathing before and after it: For, by premising bathing, the solids and fluids are most effectually disposed to receive the impulses of this most active, powerful remedy, and to discharge the morbid matter, of whatsoever nature it be, by the common excretory, the skin; by which the violent and often dangerous influx of saliva upon the glands of the mouth and throat, is moderated or obviated, at the discretion of the judicious prescriber *.

The evil effects, that attend chalybeates in female obstructions and hypochondriac cases, and those of Peruvian bark, in intermittent disorders, where they

* I cannot help recommending it to the serious consideration of the afflicted, whose impatience proceeding from a want of knowledge, often gets so far the better of the judicious prescribers intention, as to hurry them through this most important part of their cure. How repeatedly our ingenious author enjoins a course of bathing before and after a mercurial course, and in some cases, even at intervals, during the course: Let them therefore be persuaded to pursue this most rational, most effectual mode of cure, and if in place of going into the bath once, or twice, prior to their course, and once or twice after it, which is but trifling with the intention of the prescriber; let them implicitly submit the expediency of frequent bathing before and after any kind of mercurial course, to the judgment of their physician and surgeon.

sometimes

sometimes cause a most violent constriction or constipation of the bowels, with suppressions of other natural and necessary discharges, may be prevented or relieved by the prudent administration of warm bathing.

It is now fit we should close this head with some necessary directions and cautions concerning the use of baths.

I. The proper seasons for courses of bathing are the warm months of the year, those very months, when the modern practitioners send away their opulent, as well as other, patients from the baths, and make room for the neglected beggars to meet with cures, which this ill-judged practice denies to the rich. But, of this more in its proper place. Here let it suffice to say, that as cold weather is the best season for cold bathing; so is warm weather the best season for warm bathing. For, simple warm baths, since the time of GALEN^a, were looked upon as humecting and cooling. Though, notwithstanding, either may with due care and caution be applied in any season, known in our temperate climate. It is certain, that cold bathing does most service to those whom it warms, and warm bathing is most effectual, where it cools, rather than heats. Both are desirable then, at different seasons of the year. And, as the patient, who uses the cold bath in winter, is thereby defended from the inclemency of the weather and prevented catching cold; and he, who uses the warm bath in the summer, is apt to find the warm air, which he, before bathing, judged sultry and intolerable, temperate and grateful, if not cool after it, and is however less liable to catching cold in that temperature of the air, than in any other; it is evident, the seasons for cold and warm bathing are quite mistaken among

^a Lib. i. Artis curativae ad Glauconem; p. 457.

us, and that we should have recourse to our cold baths in winter, and to our warm baths in summer ^b.

2. The time of the day generally recommended for warm, as well as cold bathing, is in the morning early, sleep and digestion being well performed, and the urinary and alvine excrements discharged. This may be a proper time in the former for such patients, as are able and fit to go into the cold bath, and thence into the open air, after warm bathing. But, as the generality justly advise the patients, after warm bathing, to go into a warm bed, either to sweat or cool gradually or both; I see none objection to the bathing at night, upon an empty stomach and bowels, when one may be in bed for the whole night, and sweat, sleep and cool at leisure, so as to be in no danger from going with due caution, into the open air the next day; which can not commonly be done with safety on the days, upon which one bathes in the morning. Besides, wearied travellers can not be denied the comfortable refreshment of warm bathing, which most effectually procures them rest and restores their spirits after extreme fatigue ^{*}.

3. No person should stay longer in the bath, than he finds it refreshing and invigorating. Except such as are bitten by mad dogs or other enraged animals, or maniacs, whom it may be found necessary sometimes to continue in the bath, until they grow faint.

4. All persons should be forbidden much active motion or speaking in a warm bath; as it greatly exhausts the strength and distresses the organs of breathing, then under a considerable additional pressure to that of the atmosphere, and replenished with the rarefied juices.

^b This is further countenanced, against the modern practice, by the great SANCTORIUS; in his invaluable tract, *Medicina Statica*, § II. Aphorism. I. before cited, § 483. 4. as well as in Aph. II. which I here transcribe—*Aer calidus et lavacra actu calida, nisi obstant cruda, juvant quoque perspirationem, refrigerent interna viscera, et corpora efficiunt leviora.*

^{*} May not these who travel by land and water, from London, Bath, &c. to this place meet with the most agreeable restorative in the bath.

5. No person, except maniacs and those bitten by enraged animals, should be forced to bathe, when it raises any degree of Terror or Horror^a, nor at the approach of any epileptic or other convulsive fit; because those inordinate orgasms of the spirits may be greatly increased by the dread of the bath.

6. No person with full bowels or blood vessels, or with any inflamed, obstructed or much weakened bowel, should be admitted into a cold or warm bath; least crudities, in the first and second passages, ruptures, hemorrhages, or an increase of those disorders, may be the consequences^b.

7. The head in general is to be kept out of the warm bath, dry and slightly covered; and in some cases, it is to be left bare, or covered with a napkin wet with cold water; as where the patient is subject to influxes of blood on the brain, or eyes, to pains in the head, drowsiness, &c.

8. The rest of the body should be quite naked; except a convenient little garment, which may be carried betwixt the thighs, and supported by a piece of tape about the waite, before and behind, to hide those parts, which modesty bids us conceal from each other's sight. Whoever goes into a bath, hot or cold, particularly the former, in any, especially a tight or close, garment, does not receive half the benefit, he might expect. The efficacy of warm bathing, in a great measure, depends upon having a constant succession of new water coming into contract with the skin, while a person remains in the bath. But, when one goes into a bath in a close vestment, he is to expect little or no more water to come into contact with, and to dissolve and wash away the foulness of, his body, than what his garment, at first immersion, receives, which it holds, until he makes his exit. This considered, I should be glad to hear how the modeled practitioners, who countenance or connive at the

^a GALEN. de morb. cur. lib. xi.

^b GALEN. part last cited.

sexes bathing promiscuously and in stiff, close, canvas habits, can reconcile this custom to decency and common sense : I shall not require their reconciling it to the rules of physic ; it would be most unreasonable to demand an impossibility.

* 9. The next thing to be considered is the regulation of the temperature of the Bath. On this greatly depends the recovery and safety of the patient : And it is not difficult to be done ; since, by the use of the Thermometer, every degree of heat and cold can be so easily and effectually ascertained, that where baths are regularly constructed and rationally conducted, the physician can direct the degree of heat of the bath for his patient, with as much certainty, as the number of minutes, he would have him remain in it. How this is to be done, where the baths have none other covering, than the extended canopy of heaven, let any thinking man consider. What physician or patient can be secure of the necessary degree of heat in the water, two days successively, or any two hours in any one day, in the naked baths of our Bath ? What chance of performing cures there, in the cold seasons especially, which are the chief times destined for bathing in those open ponds of uncertainly heated waters ; so little, if at all, improved since the times of our hardy, barbarous ancestors the Britons ? But, no more of this, until we come to treat expressly on these powerful, unknown, though much frequented and abused, waters. Let me here only give this general caution in the use of baths, that no person goes into any bath, heated above nine-

* The temperature of the Dublin baths is constantly regulated by a thermometer, to the most minute point of a degree, and impregnated precisely to the prescribers directions ; and here it may not be a miss to observe that these baths, both in their structure and establishment, are much indebted to our ingenious author, consequently all the inconveniencies herein complained of at Bath, are carefully avoided, there is a large fluid and vapor, both neatly inclosed on every floor in the house, from whence the bather steps immediately into the bed-chamber.

ty-four degrees, which is found to be the heat of the blood in the natural healthful state, taken by Fahrenheit's thermometer; unless it be expressly directed by a physician upon some extraordinary emergency, to increase the degree of heat.

Under this head, two other kinds of warm bathing; to wit, 1. the pump, and 2. the vapor bath may not improperly be considered.

1. The first form of bathing was known to the Greeks by the name of ἑμβρεγμα and ἐμβροχή, Embregma and Embroche; to the Romans, by those of Stillicidum, Instillatio and Irrigatio; and is now called, by the Italians, Doccia, by the French, la Douche, and by the Germans and us, from the ordinary manner of applying it among us, die Pompe, the Pump.

By this, is meant a contrivance, by which any convenient liquor, but chiefly water, cold or hot, may be caused to destil, run or fall, from some distance, upon the whole, or any part of, the body.

The best method of making this kind of bath is by raising the water of any natural or arteficial bath into a receptacle of a convenient size and height, by means of a pump or other proper machine. This receptacle is to be furnished with one or more flexible tubes, to which may be occasionally adapted, cocks with one, or many orifices of different dimensions and forms, to apply the stream of warm water in any proportion, direction, or force required, to any part affected.

Here then, is added to the softening, resolving and penetrating power of water, that of friction; by which it is capable of doing inexpressible service in old hard and cold tumors, stiffness and contraction of the joints, gout and rheumatism.

The patient may either sit or lye in the bath, or out of it, as is found most convenient, to have the stillicidium applied to the particular part affected.

And

And the same cautions are to be used to avoid cold after this application, as after general bathing.

The power of the friction of the water may be greatly increased, by forcing it by any proper pump into a brass or copper sphere, to which a cock with a flexible leathern tube is fixed; by which the water may be driven by the spring of the inclosed air in the sphere, added to the gravity of the water. By this means, this method of applying water must be rendered most effectual in old, hard, indolent tumors, contractions, &c.

2. The second is a form of bathing not known or used among us; though the most powerful, the most effectual of any.

This seems to have taken rise among the Romans, in whose immediate territories, nature furnished many vapor baths; as in several places about Naples, Puteoli, the Bajae, celebrated by HORACE and CELSEUS, with many others of inferior note. These were called by the names of Vaporarium, Laconicum, and Sudatorium; in faint imitation of which, were contrived the stoves, afterwards called by the same names, as well as by those of Stupha, or Stuffa, the later by the Germans, who invented them in imitation of the natural, and called them Badtstuff, in their language, and in a sort of fictitious latin, Stuffa.

This is certainly the most safe and effectual sudatory known: Nor can there be an instance given of its failing, in fit subjects, under due regulation. We have already had occasion to explain the operation of warm baths; whatever holds true of them, holds also good in the vapor bath. This may easily be conceived, upon recollecting what has been said of the power of water converted into steam, in Papin's digester and other more common machines. By this means, the hardest part of animals, may, in a short time, be resolved into a jelly. Hence, the resolving power of the vapor of warm water upon an animal body may be judged. This vapor striking against the body is partly condensed

densed into water, whilst a part enters the pores. When the vapor is confined about the whole body or any part thereof, it must act more powerfully. It then warms, softens, relaxes, opens the pores, penetrates the remotest recesses, resolves and attenuates viscid and cold humors universally, and fits them for a discharge by the skin, in a bland and copious sweat, partly in the bath and partly in bed after it. By this means, paralytic disorders arising from any viscidness of the juices, anasarca and oedematous tumors, whether partial or universal, pains and contractions of the limbs or joints, and numberless other evils of this class are most happily and effectually relieved.

From the many instances of the salutary effects of warm vapor bathing, which I had observed at Aken, I was induced to contrive a sudatory upon the same principles with theirs; judging that the efficacy of their vapor baths was not solely owing to the subtil, mineral effluvia, with which they are charged, but chiefly to the particles of water most subtilly attenuated and set in motion by heat; or at least, that a simple vapor bath might probably produce very desirable effects.

* This sudatory consists of a kind of chair made of four planks or pannels, of about two feet four inches broad, and about five feet in length or height. These are closely joined together by hinges; so that they may be folded up for the conveniency of carriage, or placed upright and by hooks fastened to a square Plank, that serves for a bottom or foot-board; and then, one pannel makes a back, two others constitute the sides of the chair, and the fourth serves for a door. To this chair there is a sliding seat, with a thin ticking bottom, that, like the moveable shelf of a library or

* The sudatory with all the foregoing pipes and machines, to throw vapor or water upon any part of the body, or to contain any limb, upon the best improved and most methodical principle, are all in the Dublin Baths; see the approbation of the physicians and surgeons, Appendix.

book-case, may be raised higher or placed lower, according to the size of the patient. At the top, there is such another contrivance; but the board, which fills the whole space, is placed shelving, from the back forward, for the greater freedom in breathing; and is divided into two, each part of which is hollowed to the ordinary size of an human neck. This is adapted to the size of the patient; the back-piece is put in first, the patient is then seated, naked on the seat, and the fore part is added. Then the door is closed and the vapor admitted by the means of the following apparatus, which consists of,

1. A flat copper kettle to hold about six quarts, to which an head is adabted somewhat like that of a common alembic; but with a smaller head in proportion; as it is not designed for condensing, but conveying the vapor by a tube, of about three inches in diameter, continued from the head into the lower part of the back of the sweating chair, and by moveable pieces turned in any direction desired. About the neck of this kettle, there is an opening, by a short pipe of about an inch and a half in diameter; by which a supply of new hot water may be given without interruption; or the vapor medicated by the addition of any spirit or other volatile, aromatic medicine; or the heat moderated or stopped, by the addition of cold water, at discretion.

2. A low copper stove or little furnace with its fire place, ash hole and registers, made to receive the bottom of the above kettle, and to hold fire enough to keep the contents boiling; yet, so as, by shutting its doors and registers, the fire may be in an instant suppressed and the boiling and vapor made to cease.

The patient sits naked in this chair, with a napkin about his neck to keep the vapors from coming out and annoying his head or lungs; and may be continued in it, and supplied with drink or cordials, according to the prescriber's intentions.

It

It is easy to see the different advantages this holds from the common stoves or hot-houses in Bagnios; where the head and lungs of the patient must be injured by the heat and by breathing such an highly rarefied and offensive air, as must be in such hot and confined places. Besides, in this, you may have the most absolute power over the sudatory, by admitting more or less vapor, simple or medicated, at discretion, or by totally stopping its course: Which can not be done in the common suffocating stoves at the Hummums.

By contriving boxes to contain particular affected limbs, a partial vapor bath, simple or medicated according to the prescriber's intentions, may be readily administered; than which, there can not be a better, nor, in many cases, so good a Fomentation.

By different pieces of tubes, some streight, others angular, with a rose, like that of a gardener's watering pot, such a vapor may be conveyed to any part of the body. And I am persuaded, that by such a vapor properly conveyed to the ears, many pains of these parts and deafnesses may be cured, that do not give way to any other known form of medicine.

This small machine, I have contrived to make it portable. But, it is not difficult to make it more effectual by enlarging upon this plan. And, if what I have here offered upon the use and efficacy of water variously applied in the relief or prevention of the almost numberless disorders incident to the frailty of human nature, may be hoped to have any weight, we may expect to see all the necessary conveniencies for the several kinds of baths established in every considerable house in the country, and regular and well-furnished Bagnios, encouraged and set up in every town. And, that the poor may not be excluded the benefit of the helps, which are to be drawn from this quarter, at a moderate expence; I beg leave to recommend it to the public to extend their benevolence to their suffering fellow creatures; and, by a charitable

able contribution, establish public baths, both cold and hot, to which the poor may have easy access. It would likewise be not onely an act of great and true charity, but the best policy, to establish proper baths in all bridewels, goals, and other places of confinement; where, by obliging the wretched, who from filth and nastiness, contract the most malignant and pestilential diseases, frequently to wash and cleanse themselves, much of the calamity, and the dreadful infection may be obviated, which they so commonly suffer and so often impart to the rest of the society, in general goal deliveries. It is also, in mine apprehension, to be wished, that many of those, who are confined in various diseases in hospitals, were put upon the same cleansing, wholesom regimen; and that our sailors, in long voyages, were obliged to make frequent bathing a part of their salutary discipline; which would certainly help to keep them free from scurvies and other disorders, to which they are found too subject *.

I shall close this part of my dissertation with an observation and proposal, which I think extremely conducive to the end proposed by this and all my poor labours, the common good of the Republic.

I presume it must be obvious to every reader, who has attentively read this tract, thus far, that there is nothing known, that bids so fair for the character of the much, but vanelly, sought universal remedy, as common water; since nothing is found so necessary to life, so effectual in preserving present, or restoring lost health, as water.

I therefore venture to recommend its more frequent use to the public in general, and that it may be further introduced into practice in our hospitals in particular, than it is at the present found. But, if

* The scheme here proposed is very consistent with that generous philanthropy which so eminently distinguished our humane author through life.

from the constitution of particular foundations, which I look upon to be so sacred, as to be, for the most part, unalterable; this may be found in most impracticable, I humbly propose it to the consideration of BRITONS, more remarkable, more justly famed for public benevolence, for making provisions for the health of the bodies and minds of the indigent, in the erecting alms-houses and hospitals, schools, colleges and other seminaries of literature and arts, than any other people, or perhaps, than all the other nations on the globe united can boast; to erect and establish, in the capital and other great cities, one or more Bath or Water-hospitals; where physicians, with proper attendants, may be appointed, and the poor in all fit cases, at all times readily received and supplied with light, simple diet, clean beds, baths of all kinds, and water simple and variously medicated of different degrees of heat and cold adapted to the generality of cases, that may offer.

Such an hospital may be built, plainly and elegantly, contiguous to a navigable river for the sake of fuel, and may be supported at a much less expence, than any of the present foundations, and may vie with any of them, if not outdo most, in utility and benefit to the public.

A P P E N D I X.

C A S E I.

IN December last, I proposed a course of bathing to a young gentleman, who was under the care of the late Doctor Lucas; and who had, at several times, called into consultations some of the most eminent of the Faculty, in this city. The disorder was a violent rheumatic fever, which had continued without much intermission for twelve months, and still continued so obstinately excruciating, that his situation, when we began the baths, was very deplorable; the joints of his knees, ancles and toes, were prodigiously swelled; then his hips, sides and back, were alternately seized with the most violent pains; his body reduced, and emaciated, sometimes he could walk with crutches, at other times he was obliged to be carried, and even turned in his bed with sheets, his appetite gone, and his sleep painful and disturbed.

As the vapor bath was fixed upon, as soon as we had gotten a proper sudatory made ready, we began, on the 13th of January last, to put him into the vapor of simple water; this we continued every other night, (our patients weakly state not admitting it oftener) for six times, by which his complexion became clearer, his spirits better, his sleep less disturbed and more refreshing, his pains not so acute, and his joints less swelled and more pliable; but notwithstanding these favourable symptoms, he became much more feeble, to such a degree, that he was either constantly carried or wheeled in a chair; besides, from being so extremely relaxed, a tenesmus and the piles

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were

were brought on him. I then proposed to my deceased friend, to have the water properly impregnated with rock salt, alledging from experience, that this would produce every desirable effect. In consequence of which, our patient continued going every other day, and latterly every day, into this impregnated bath for twenty nine times, during which we found all his disagreeable symptoms gradually to decline: viz. first, he could sit up for three or four hours in his chair, then move a little through the room on his crutches, and presently after walk without them, his pains all subsiding, and his spirits, appetite, and rest, all restored to him; and, in short, before he had done with his course of baths, all his friends, who visited him during his course, thought, in all respects, that he looked better, and was really better, than they had known him for some years; in which opinion he, himself, most heartily concurred.

This is a case not unworthy the most serious consideration of the Faculty, and the public in general, the more particularly so, as it was a fair trial of the opposite effects of these two vapors, and fully proved under the inquisitive eye of our author.

The gentleman himself has often offered me the fullest testimony of his cure, corroborated by the deceased Doctor Lucas, which I now regret I did not accept of; but this cure was not made in a corner, nothing of the kind could be more publicly known; and although the gentleman himself is now absent, I can have the most honorable testimony of his cure, from his, and the deceased's, numerous and most respectable friends and acquaintance.

N. B. The following are some observations made during the above process of bathing our patient:

His time of remaining in the bath was always regulated by his degree of health and strength, &c. and, a few times excepted, the vapor was never raised above 96 degrees, from which to 85, was the medium that he was generally kept to, when he began with

with the vapor of simple water, he generally continued in the bath from 20 to 25 minutes each time, which as he weakened was reduced to 12 minutes each time; we began the impregnated salt vapor bath with 15 minutes each time; in the first week it was raised to 35, in the second to 55, from which to an hour was the longest time he ever stayed in the bath; every night and morning his whole body was constantly rubbed with flannel gloves, but particularly his joints, sides and back; after which his knees, and feet were embrocated with the strongest and purest salt water made from a solution of chrystalline rock salt; from his fifth salt impregnated bath he went out to take the air daily, at which time his tenesmus and piles intirely disappeared.

As I have in the last mentioned case produced an instance of the good effects of a vapor raised from a proper solution of rock salt, I have only to add, however simple the impregnations, that this vapor, in a variety of cases, produces the most salutary effects, but in rheumatic, and all old pains and aches, in scurvies, tetters, blotches, and, in short, in all scrophulous disorders, in all relaxations of the nerves and tendons, and in freeing the constitution from all the tormenting pains produced by mercury, and, to which, I could add many more, as there is no impregnation, as far as my observation has served me, more generally applicable: I am well aware, that the giving it a preference in relaxed constitutions, will be rather thought a novelty, but, as all hot baths have hitherto been esteemed powerful relaxents, and, indeed, during the time that the patient is in this bath, thus impregnated, it has that effect, yet the steams produced from a dissolution of the salt being full of volatile acid particles, and the pores being opened, and most powerfully relaxed, are, disposed notwithstanding to receive those particles, and by the effects of those particles, thus received, as soon as perspiration has ceased, they regain a greater vigour and contraction.

traction. Next to this sort of bath, I would recommend that of warm salt water, rendered less tepid every time, until the patient is put into the cold bath; for, if it is not allowed me, that the vapor bath does accomplish the full scope and intention of cold bathing, it will, most certainly, succeed in many cases where the other fails, or is productive of ill effects, and succeeded by the tepid salt water bath, they are the best known preparative to cold bathing; nor is the bather so subject to colds after an impregnated salt water or vapor bath, as from warm fresh water baths.

There is another kind of impregnation from whence in many cases, much may be expected, but particularly in hard obstinate swellings, venereal ulcers, fistulas, piles, disorders in the urethra (the bougee premised) in all hard nodes and swellings, and, in short, where obstructions are to be removed, or where the most powerful resolvent is required.

This is vapor arising from water impregnated with quicksilver; but as crude mercury, though ever so long, and repeatedly boiled, will not lose a particle in its weight, nor impart taste, smell or colour to the water, we are only to judge of its impregnation from the effects produced by the water, as for instance; it has been found to be a powerful, and safe antiscourbutic, and may be drank at all times; it kills vermin, and when all the celebrated medicines have failed; the drinking plentifully of this water, has generally proved effectual in destroying and bringing away worms; applying it warm to the parts it cures old sores and ulcers; and by frequent bathing in it, when raised to a proper degree of heat, it will cure the itch, and other scrophulous complaints. Nor is it singular in producing no visible alteration in the water, for crocus metallorum, and some other preparations of antimony being barely infused in wine, without losing the least grain of their weight, or imparting either taste, smell, or colour to the wine, yet never fail in giving it a violent emetic quality. I have

have known twenty quarts of Canary, at several times poured upon one and the same ounce of crocus metallorum powdered, and the last quart was as violently emetic as the first; although upon nice trial, I could not find that the powder was in the least diminished in its weight, nor did it cause any apparent change of smell, taste, or colour in the wine.

There is another method of local application, not particularized by our author, and may, in some cases, be attended with very good effects; viz. The fume or dry vapor arising from various vegetable extracts, gums, balms, &c. poured upon a heated iron, which is to be placed in a machine, something like a small tea-kitchen, from which a person may have any part of their body fumigated by proper pipes, adapted thereto; such machines I am now getting made, and as they are portable, the gentlemen of the faculty may have any thing in this manner done to the weakest and most helpless patient without disturbance, fatigue, or trouble.

C A S E II.

IN the month of August, 1769, a lady whose nerves were in so deplorable a state, that the least surprize, or noise, threw her into tremors; applied to the vapor bath, by which she found much relief, but leaving it off to soon in the October following, she had a violent eruption which spread over the whole body, and produced a succession of dry scales; the woods, and other sweetners, were prescribed without effect. In December, she again had recourse to the baths, which encreased the eruption for some time, but in the course of three weeks, or a month, going into the vapor bath (from an impregnation of rock salt) every other day, all these disagreeable symptoms disappeared; her complexion became clear and healthful, her skin white and polished, her nerves firm and restored

stored to their natural tone, and her whole frame changed, beyond her most sanguine hopes, for the better.

C A S E III.

OF a lady, who for three years laboured under a total indigestion, so that nothing stayed on her stomach for any time, but simple water; her whole frame was relaxed to that degree, that the least surprise or anxiety affected her nerves, and brought on strong convulsive hystericks, which would return so rapidly, as to deprive her of all sense, and nearly of life for three or four hours together; she was also subject to violent hectic fevers, and flushings, for which complaints, she had, during the above period, tried a variety of remedies, until towards the end of the year 1769; she was advised to make use of an impregnated vapor bath, which she continued every other day, for near three months, in which time all her complaints decreased, nor (except two or three hysterick fits, last February, which were subdued by four or five baths) has she had the least return of indigestion, hystericks, or hec ticks, and her nerves have continued firm, and undisturbed, ever since.

N. B. As it would be unfair to omit any thing for or against the effects of the baths; this lady was troubled with a weakness of sight, which was not made either better or worse by the baths.

C A S E IV.

To the PUBLICK.

IN justice to Doctor Achmet, and for the benefit of my fellow creatures, I am induced to offer a state of my case to the public, viz.

About

About one year and a half ago, I was so unfortunate as to receive a certain disease, for which I took medicines from a French doctor in the Isle of Man, without effect: I then went from Castle-town, my place of residence there, to Douglass, and put myself under the care of a Surgeon to the army, at that time quartered there; this gentleman laid me down in a salivation for five weeks, from which operation I did not find myself the least relieved, in place of which (as I was told, owing to a cold) the Mercury or something, flew to my head, and for some time deprived me of hearing any thing; this continued about one month, and afterwards left my head in the most confused state, and my whole frame full of the most disagreeable, melancholy sensations. I was then advised to apply to a quack doctor in the Island, who again laid me under a course for two months, which had nearly finished me, and raised all my former complaints to an intolerable degree; after which my whole body broke out for some time in great scabs and blotches, but miserable as I was, I was the only one of three who escaped with life from this last murdering operator.

I then applied to doctor Loyde of Castletown, who again salivated me for seven weeks, by which only I got any relief, yet my head continued stupid, heavy, noisy, and my other disagreeable sensations returned by degrees. I was then recommended by a gentleman in the Island to doctor Spann, attendant physician to Mercer's hospital, in the city of Dublin, who put me into the hospital, under whose care, and doctor Hamilton's I remained for about three months, but, altho' I must do them the justice to return them thanks for their care and humanity, yet I could not discern any material change wrought in my disorder therefrom. I then applied to doctor Achmet, at Finglass, who after examining me, recommended me to an hospital, and seemed no ways inclinable to take me under his care: However I told him that I had
been

been in Mercer's without effect, and prevailed upon him to attempt my cure. My case when I began the use of the vapor baths was as follows; the disorder in my head had arose to such a degree, that I was in almost a constant state of delirium, and my mind so full of inquietude and Uneasiness, that I could not stand or sit any length of time in one place, and at certain times, my bowels seemed full of pains and inflammations, and an almost constant burning painfulness in my fundament, with a callous lump below my groin; in short, my situation was such, that rest, either day or night, I was a stranger to.

I have now been one month under the doctor's care, in which time he has treated me with the utmost tenderness, attention and care; and since the first week of my residence with him, I have daily continued recovering the use of my senses, and faculties, and my disease seems, in every place that it affected me, to have submitted to the salutary effects of his medicines and vapor baths; in such a manner am I now, that I hope, through the blessing of God, of being as well as ever I was in my life. I must here observe, that when I first went into the vapor, or steaming bath, my time was limited every other day to about an hour, and that in the last week of my being there, I generally spent every day from three to four hours in the said bath, and the times from my first going into the baths, till lately, I during my stay in the bath until I came out, continued to spit as much as if I had been in the highest salivation, which I can attribute to nothing but the mercury being lodged in my constitution. And another thing observable is, that altho' in the whole time I have been under the doctor's care, I did not escape two days of being either purged, puked, or bathed, and sometime altogether in twenty-four hours; yet I have continued to recover my strength, and am light, supple, and full of spirits at this time, nor did I catch cold, during the whole time, once excepted, which was a few days before I left the baths,

baths, occasioned by my going for two days to help in with a gentleman's hay, and after my being in the vapor bath over-night, getting first hot by working, and then throwing off my coat, which cold I was cured of by going twice more into the vapor bath.

The above is, to the best of my remembrance, a short narrative of my past misfortune, and to the best of my judgment (wich is assisted by my feelings of a renewal of health) of my present state. I, during the process of my cure, by desire of doctor Achmet, have twice waited upon doctor Spann, to acquaint him therewith, but did not meet with him, the last time I saw his sister, and she was so good to tell me, she would acquaint her brother, which, I hope, the doctor in justice to doctor Achmet, will communicate to the public.

his
Thomas X Quirk
Mark.

Sworn before me this
18th of Oct. 1770.

JOHN FULLER.

The above affidavit was truly
read to the above named
Thomas Quirk, by me
J. DAVIS.

County of } JAMES BURNE of Maynooth, in
Dublin. } the County of Kildare, came this
day before me, and voluntarily maketh oath on the
Holy Evangelists, that deponent was most dreadfully
afflicted with the most violent pains in his bowels
and stomach, with great difficulty of making water,
and (except in consequence of a strong purge) a total
deprivation of voiding any thing by stool; in place
of which, deponent constantly puked up every kind
of nourishment he took into his stomach, which was
sometimes of a blueish green, or yellow colour, and
at others as red as blood; for all of which, deponent
in the above time was nineteen weeks in the infirmary,
and under the care of doctor Powell, doctor John
Farrell, doctor M'Guire, and Lord Tremblestown,
and for these few last weeks under doctor Achmet's
L care;

care; from all of which, deponent received little or no benefit, until about ten days ago doctor Achmet ordered deponent into the steaming-room, and has continued applying the steams ever since, in which time all the above tormenting symptoms are nearly left him, and deponent's food digests and passes by stool; his water is free and natural, and of a good colour, and his rest and sleep restored to him.

his
James X Burne
mark.

Sworn before me the 18th day
of August, 1769, being first
truly read to deponent by me

JOHN RAWLINS.

County of } **R**ICHARD GIBBONS, late of Dor-
Dublin. } setshire, in the kingdom of Great-
Britain, came this day before me, and voluntarily maketh oath on the Holy Evangelists, that for five or six years last past, deponent was at times, much troubled with violent pains, which attacked him in various parts all thro' his body and limbs, for which deponent went through several operations to no effect, and was in the month of May last, nearly deprived of the use of all his limbs, and otherwise grievously afflicted with the most severe pains through the rest of his body, attended with inflamed sore eyes, a great lowness of spirits, and so total a weakness, that deponent was scarce able to walk, in which situation, deponent applied to doctor Achmet, who ordered him immediately into the steams, which he has continued in the use of for about a fortnight, in which time deponent has nearly got freed from all the above disorders, and frequently walks from Finglass to Dublin, and back again without any uncommon fatigue or inconveniency to himself.

Richard Gibbons.

Sworn before me, at Finglass,
in the said county, the 11th
day of August, 1769.

JOHN RAWLINS.

County

County of } **M**ATTHEW CURTIS, late servant
 Dublin. } to Lord Baltinglass, came this day
 before me, and voluntarily made oath on the Holy
 Evangelists, that about two years ago, he received a
 severe cold in his head, which very nearly deprived
 him of his hearing and sight: deponent further saith,
 that deponent was admitted into Steevens's hospital,
 where he remained under cure for six months; but
 about five weeks since was turned out as incurable:
 when in about three weeks after, deponent applied
 to doctor Achmet, who has continued the use of the
 steams to him ever since, in which time he has in-
 tirely recovered his hearing, and is daily recovering
 his sight, and can now see and distinguish the diffe-
 rence of colours, and every object which he meets
 with

his
 Matthew X. Curtis
 Mark.

Sworn before me, at Finglass,
 in the said county the 12th
 day of August, 1769, be-
 ing first truly read to depo-
 nent by me

JOHN RAWLINS.

County of } **W**ILLIAM DAHILL, late servant
 Dublin. } to Robert Edgeworth, of the
 town of Longford, Esq; came this day before me,
 and voluntarily maketh oath on the Holy Evangelists,
 that about three months ago, from a severe cold,
 deponent was nearly deprived of his sight and hear-
 ing, for which deponent was under cure for three
 weeks in Steevens's hospital, in which time deponent
 grew worse in his hearing, and intirely lost his sight,
 and was discharged from said hospital as incurable, on
 Friday the 21st of July last, and this deponent fur-
 ther sayeth, that on the following day, he was led
 blind to Finglass, where deponent applied to doctor
 Achment, who ordered the use of the waters, and

put him fourteen or fifteen times through the steaming-room, by which, in little more than a fortnight, this deponent has in a surprizing manner been restored to his sight and hearing.

his
William X Dahill
mark

Sworn before me, at Finglass,
in the said county, the 11th
day of August, 1769, be-
ing first truly read to depo-
nent, by me

JOHN RAWLINS.

N. B. These attested cures were made by those who first made use of my vapor baths: there were many more of them but the rest are all lost, or mislead. My baths at Finglass will be kept in constant readiness, for such patients as choose to join to their good effects, the best air about this metropolis, where the most commodious lodgings may be had, with every other convenience upon the most reasonable terms.

Since

Since this Essay went to the Press, a few Cases have occurred, which for the Benefit of the Public are here subjoined.

A Young gentleman, who had abused himself so much in his nonage, as to incur, upon taking cold, a seminal weakness; besides, his nerves were much disordered. I put him into a strongly impregnated vapor bath; which on his using three times made a most favourable change, I continued the vapor bath; from which, after cooling a little in bed, I plunged him into tepid baths of 60, 55, and 45 degrees of heat; and after all his complaints had disappeared, he went into the cold baths.

N. B. This gentleman is since married; I see him frequently, and he tells me that, in all respects, he is perfectly cured.

The second is a gentleman, who whilst in the House of Commons, was seized with a total suppression of urine; many things were administered to him from eight o'clock in the evening, until near one in the morning. He then was ordered to the baths, where he came afflicted with the most excruciating pains: I immediately put him into an emollient vapor bath, which in eight minuets relieved him; he continued discharging urine for ten minutes more, when I took him out; after which his exhausted spirits were perfectly restored by a good night's repose.

The third case is that of a young lady, who was, the 31st of December last, ordered into the baths. She had been for some time in a very indifferent state of health, and rather irregular: but for four months prior to her coming to the baths, her complexion had changed from being perfectly clear, to a dark clouded fallow hue, and some spots appeared on the surface of the skin, all over the region of her stomach, and continued to spread over that part of her body, her chest and neck; some of these morphea spots were of
a tawny

a tawny colour, others of a muddy yellow, and some resembling iron moulds. After cleansing the skin with a deterfivè fluid bath, I put her every other day into a strongly impregnated vapor, varying it as the disorder changed; in this she continued at first from 25 to 40 minutes, and afterwards from that to an hour, in which time all the *morphæa* spots went off, under which there arose a red and callous tumor; from those numbers of little pustules appeared, from which there oozed a thin, limpid, sharp humour, all the discolourings bore the same complexion, but the most confirmed ones were longer in their change of colour, and more difficult to eradicate; they all went off in dry scorbutic scales, besides many scorbutic eruptions appeared all over the body, but particularly on her face, and back part of her neck; the dark shades in her face, after her tenth bath, gradually appeared stronger and stronger, untill an evident eruption covered them, and their complexion was deeply tinged with the yellow of her former spots. She complained for some time at first, that when the perspirable matter from her face touched the tongue, that it was intolerably salt. The face and neck of this lady is now covered with a general eruption, which is falling off in little horney excrescences and dry scales, the rest of the body being clear, and perfectly freed from all the former appearances.

A young lady, who has been for many years a victim to the scurvy, has been using the baths since the 14th of January last, many of her disagreeable symptoms are disappearing.

A third lady who has been excessively ill with the scurvey, has been for some time in the use of the baths, and she is daily getting better.

Besides there are some other scorbutic, hysteric, and nervous cases, now under cure: but it would hurt the sale (the original intention) of this pamphlet, were it to be delayed, untill they are all perfected,
but

but, therewith, a variety of others, which are now daily coming under cure, will, I make no doubt, afford in the course of next summer, matter in themselves, sufficient for an entire pamphlet. I could now produce some extraordinary good effects from my fluid and vapor baths, and stoves, after having gone through ineffectual mercurial courses, to some patients labouring under a certain disorder, but this I must leave to their own candor, and to the discretion of the gentlemen whose care they were under.—As for the cases herein particularized (besides those that have been solemnly attested) the patients themselves are very reputable characters; and where there has been any attendant physician, or surgeon, they were gentlemen eminently distinguished in their professions, and of such truth and candour as will vouch for my veracity, in what is here set forth, relative to their respective patients, besides the patients themselves may upon applying to me, be immediately referred to.

Before I conclude, I cannot help observing, that joined to an almost general success in the treatment of those who submit to, and persevere in a regular course of bathing, that hitherto, an ease, pleasure, and content, are conspicuous in every person who frequents the baths by way of prevention, cleanliness, or pleasure.

The particular attention paid to the baths by the most distinguished characters in either faculty, the general approbation of both, and the honourable support given them by the whole legislative body, justly claim my warmest gratitude, and it shall be the height of my ambition, upon every occasion, to produce instances wherein it may appear, that I have not been altogether unworthy such distinguished marks of national and physical regard.

A C H M E T.

N. B.

N. B. Any gentleman who chooses to make experiments upon my vapor or fluid baths, may upon every convenient occasion have the use of them. I mention this, as some gentlemen have given their time and application towards useful improvements, much to their own satisfaction and patients benefit; but least I should be misunderstood, such gentlemen are at free liberty to reap the benefit of their own discoveries, by attending the administering them to their patients, to whom they become responsible for the effects.

PRO-

PROPOSALS for establishing a
Set of elegant and commodious
BATHS in the City of *Dublin*.

I.

THAT a convenient Building, or Buildings, shall be erected, fit to contain all the **VARIOUS KINDS** of **BATHS** *simple or medicated, cold, temperate, tepid, or warm*, with **STOVES** and **VAPOR BATHS**, **PUMPS** or **WATER-BRUSHES**, with **CONVENIENT CHAMBERS** and **APPENDAGES**.

II.

That the **COLD BATHS** shall be *simple cold Water*, or *medicated* with *Saline* or other *Substances*, and brought to such Degrees of *Cold* or other *Temperature*, as shall be judged agreeable to the **Directions** and **Intentions** of the **Prescribers**.

III.

That there shall be several **BATHS** for *temperate, tepid, or warm Bathing*, *simple or medicated*, and brought to such a Degree of *Temperature* as shall be directed by the **Prescribers**.

IV.

That there shall be several **STOVES** and **VAPOR BATHS**, *simple or medicated*, and of whatever **Temperature**, the **Prescribers** shall direct, calculated for the whole **Body**, or any **Part** or **Limb**, so as to answer the **Intentions** of the **Prescribers**.

V.

That the **BATHS** shall be furnished with a *Machine*, or *Machines*, to throw **Water**, *simple or medicated, cold or warm*, in any *Direction*, in any *Volume* or *Form*,

Form, and with any Force required, upon the whole, or any Part of the Body, agreeable to the Directions and Intentions of the Prescribers.

VI.

That every PROCESS of BATHING shall be furnished with *fit Chambers*, for *dressing*, for *sweating*, *reposing*, &c. &c. and all other Conveniencies found useful and necessary by the judicious Prescribers.

VII.

That a SUBSCRIPTION be opened, to raise a sufficient Fund to carry this extensive and useful Scheme into Execution, which is computed to amount to 612*l.* 4*s.*

VIII.

That as soon as the SUBSCRIPTION is full, before any Subscription is paid, the several SUBSCRIBERS shall meet and appoint a TREASURER, or TREASURERS, or TRUSTEES, to see the Subscription properly and faithfully expended.

IX.

That the ERECTION, DIRECTION, and CONDUCT of the BATHS be committed to Mr. ACHMET, who pledges himself with the Public, to carry the Scheme, with the utmost Exactness and Fidelity, into Execution; so as best may answer the Expectations of the Public in general, the Subscribers in particular, and more especially, the Learned of the Faculty of Physic, and Profession of Surgery, under whose Direction and Auspices, he wishes to conduct the Baths.

X.

That the *Expences* of each and every of the Baths, or other Processes of Bathing, shall be regulated by the Subscribers, when the Building and Baths are finished. And,

XI.

That *each Subscriber* shall be intitled to take the Value of his Subscription, in the Use of the Baths,
or,

or, by a Ticket, transfer his Right to any other decent, orderly Person, or Persons.

The APPROBATION of the Physicians.

WE are of Opinion that, the establishing a public Bath in this City would, under proper Regulations, be extremely useful; and we believe that Mr. Achmet is well qualified for carrying such a Scheme into Execution.

Dublin, April 18, 1771.

John Ratty,

Dan. Rainey,

John Purcell,

Ol. Athy,

John Moore,

Tho. Bell,

R. Wood,

N. Vero,

Dan. Cooke,

Robert Scott,

C. Lucas,

Rob. Emmet,

David M'Bride,

Fielding Oult,

John Curry,

Matt. Carter,

J. M. Daly,

Francis Ferrall,

John Kelly,

John Charles Fleury,

E. Smyth,

H. Quinn,

N. Barry,

John Ferrat,

Clem. Archer,

James Span,

Arch. Hamilton,

Francis Hutchison,

C. Barber,

Geo. Maconchy.

of, by a Ticket, transfer his Right to any other do-
 cent, or by Person or Persons.

The APPROBATION of the Surgeons.

WE, the Professors of Surgery, whose Names are underwritten, do hereby severally testify our Approbation of the annexed Proposals, and Plan, for erecting a Set of regular and commodious Baths within this City, which we judge of general Utility, and highly conducive to the Health of the Public, when conducted with Prudence and Regularity.

Art. Winter,
 Phil. Woodroffe,
 Jam. Boyton,
 Mich. Keogh,
 Will. Collum,
 Wm. Vance,
 And. Darcy,
 John Whiteway,
 Sam. Croker King,
 Thomas Kelly,

Gust. Hume,
 David Fitzgerald,
 Wm. Ruxton,
 Geo. Daunt,
 Arch. Richardson,
 Rob. Bowes,
 Geo. Doyel,
 R. Boate,
 Mark Rorke,

The SUBSCRIPTION.

WE whose Names are underwritten, do severally promise to contribute and pay the Sums, to our respective Names annexed, to the Treasurer, or Treasurer's, to be appointed for carrying the foregoing Scheme and Plan into Execution, agreeable to the above Proposals.

WE

WE do hereby certify, that we have this Day viewed Mr. Achmet's Baths, on the Batchelor's Quay, and that they appear to us very methodically constructed, that the House is elegantly and compleatly furnished, and the whole well calculated for public Utility: And as we have observed, this useful Undertaking has been attended with great Expence; we judge the Founder justly intituled to all public Encouragement.

Given under our Hands in Dublin, this 19th Day of August, 1771.

Geo. Daunt,	John Rutty, M. D.
Geo. Whittingham,	John Ferral, M. D.
Sam. Croker-King,	T. Hutcheson, M. D.
Francis Foreside,	Geo. Cleghorn, M. D.
Al. Cunningham,	C. Lucas, M. D.
David Fitzgerald,	John Moore, M. D.
Phil. Woodroffe,	G. Hufsey, M. D.
Henr. Rock,	James Tully, M. D.
Jas. Tasker,	Tho. Bell, M. D.
Rob. Bowes,	Fran. Ferral, M. D.
Tho. Kelly,	Rob. Scott, M. D.
Wm. Vance,	David McBride, M. D.
James Boyton,	Gustavus Hume,
Rice Gibbons,	John Purcell, M. D.
James Mills,	Arch. Hamilton, M. D.
James Spann, M. D.	Dean Swift,
Rob. Emitt, M. D.	Hamilton Kelfo, M. D.
J. M. Daly, M. D.	Ed. Perry Bagot,
Hanly Wale, M. D.	And. Darcy,
Daniel Cooke, M. D.	Wm. A. Howard, M. D.
J. Charles Fleury, M. D.	Wm. Ruxton,
Daniel Rainey, M. D.	Art. Winter,
Mich. White,	Mark Rorke,
John Neale,	Mich. Keogh,
William Loyde, M. D.	Evers Ryan,
George Doyel,	Edm. Blackall, M. D.
Andrew Blake, M. D.	John Whiteway,
Matthew Carter, M. D.	Patrick Hanly, M. D.

At

At the above general Meeting, a Committee of five Physicians and five Surgeons were appointed to form Regulations for the Baths.

The Committee having met, according to Order, on Wednesday Aug. 21, 1771, they came to the following Resolutions, and desired to have them submitted to another general Meeting.

The Report of the Committee of Physicians and Surgeons, appointed to consider of Regulations for the Dublin Baths, 21st Aug. 1771.

Resolved, That it is the Opinion of this Committee, that the following Rates will be reasonable: l. s. d.

For cold Bathing, each Time, ——— 0 2 2

By the Month, ——— 1 14 1h

For a tepid Bath, ——— 0 5 5

For a Vapour Bath, ——— 0 5 5

For either Bath with a Bed at Night, } 0 11 4h
and a Breakfast the next Morning, }

Resolved, That Dr. Achmet has informed this Committee, that he desired these Rates should be the sole Expences of his Baths, without any Perquisites or Vails to Servants or Attendants.

Resolved, That it is the Opinion of this Committee, that the Public may be fully assured, that no Patient shall be put into the same Bath, or same Bed, in which another has bathed or lain, without a perfectly clean and fresh Bath, and clean linen.

Resolved, that no Person whatsoever, but such as use the Baths, shall be admitted to a Bed in the House. C. LUCAS, in the Chair.

DUBLIN BATHS, Aug. 26th 1771.

The Committee this Day made their Report to the general Meeting, who unanimously approved thereof.

WE, the underwritten Physicians, having been prevented from visiting Mr. Achmet's Baths on the 19th Inst. have, since then, examined them attentively, and agree in our Approbation of them, with the Gentlemen who signed the former Certificate.

N. Barry,

E. Smith,

C. Archer,

H. Quin.

Dublin

Dublin Baths, 5th of October 1771.

ON the 10th Inst. will be opened the large general cold Bath at the following Rates, viz.

Subscribers Tickets transferable	l.	s.	d.
By the Year —	3	8	3
By the Quarter —	1	2	9
By the Month —		11	4h
By the Week —		3	9h
By the the single Bath	1		1

N. B. As it is the established Rule of the Baths, it is requested that all Subscribers pay their Subscription on setting down their Names.

Dublin Baths, 20th of February, 1772.

Going to be erected immediately, a large elegant Cold Bath, and an additional Number of warm Baths, such as will decently accommodate the middling and lower Classes of People, upon the most moderate Terms, to whom, notwithstanding, Dr. Achmet will pay an equal Attention, as to any who comes under his Care.

F I N I S.

Mary
L. E. Haller
E. F. Os

Monsieur H. Koch

~~M~~ Gubbins & S
M Plummer

~~At~~ Roche
~~2 m~~
~~at~~ 2 2 2

H. F. C. Grant

Jane Macnamara